A

DESCRIPTIVE CATALOGUE

OF

WET PREPARATIONS, CASTS, DRAWINGS, MODELS, BOOKS, ETC.,

CONTAINED IN

THE MUSEUM

OF

THE BIRMINGHAM AND MIDLAND COUNTIES

Lying-in Hospital and Dispensary,

FOR THE DISEASES OF WOMEN AND CHILDREN;

ARRANGED AND EDITED IN COMPLIANCE WITH THE WISHES OF THE BOARD AND MEDICAL OFFICERS,

BY JOHN G. CONNOR, A.C., T.C.D.

"Knowledge is power."

Ιασισ Του θεου Εστιν—HYPPOCRATES.

BIRMINGHAM:
PRINTED BY M. BILLING, 75 AND 76, NEWHALL STREET.

MDCCCXLVII.

Presented with the
respectful Compliments
of the
Medical Officers

Dr. Mackay begs to
resent his respectful
omplts to Dr. Craigie,
nd to request his ac=
eptance of the accom
anying Catalogue of the
Birmingham Lying-in Hos=
pital Museum

6 Newhall St
May 29. 1848

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Dear Mr. Elkington,

I could not think of letting the following Catalogue come from the Printer's without saying that you are not to be held responsible for the matter or style of its contents. Still, at the same time, allow me to return thanks for the great help you have given towards its completion, not only by being the Donor of the most valuable and interesting Preparations, whereby many links are now filled up, but also for Revising the Proofs, and by allowing me the use of your Note Book, which has rendered the Pathological department so much more valuable; and I have no doubt but that your indefatigable zeal will yet repay you, by elucidating the true nature of many of the Diseases of Women and Children, and thereby lead, if not to their permanent Cure, at least to their temporary mitigation, and so soothe the last hours of suffering woman. And receive, dear Sir, ere we part, my grateful thanks for your unvarying politeness as a Gentleman, kindness as a Friend, and courtesy as a skilful and "beloved Physician."

I have the honour to be,
Dear Sir,
Your obedient humble Servant,

J. G. CONNOR.

To Mr. Francis Elkington.

R35722

INTRODUCTION.

At Earth's creation, when the world's Mighty Architect looked on his work, he "saw that it was very good;" and "blessed man, and said, Be fruitful, and multiply, and replenish the earth." Since then it has teemed with life, each animal "bringing forth after his kind;" and the perpetuation of animals has gone on, harmonised and controuled by the most wonderful and undeviating laws; for, amidst the constant change and succession of individuals, we observe the character first impressed on each race by the Creator of all, uninterruptedly transmitted from parent to offspring, each animal "upon the earth after its kind;" and though "one generation passeth away, and another cometh," still, it comes like its predecessor, "in structure, functions, habits, food, instinct, passions, and the limits of its existence;" and the more we look "into the bright Volume of Creation, the pages of which are daily and hourly unrolled to us," the oftener we shall "stand still and consider the wondrous works of God,—the wondrous works of Him who is perfect in knowledge."—To enquire into this abstruse but all-important and interesting subject, is now one that the greatest Anatomists and Physiologists of the day deem a subject worthy their minute study; therefore we need not hesitate to draw the attention of the young members of the Profession to this branch—one that is so intimately connected with their character as learned men and skilful Physicians. To the age of Aristotle, "Nature's great Secretary," there was not much said on this subject; and it is to be feared, that either the mists of ignorance, or the influence of prejudice, perverted or blinded his mind on this subject; or that the frail bark, laden with his knowledge, as it glided down the stream of time, must have been overwhelmed, and but little of the original saved from the turbulent waves of conflicting opinions; or that, as she stopped at the cities of knowledge, she took in an addition of an inferior article. But, however this may be, until the time of the immortal Harvey, whose name is indeed worthy of the "whitest chalk," not much, substantially true, was known; but with him came a new æra in science, and he deserves our admiration and thanks, as the leader of the glorious band of Anatomists and Physiologists of the present day, who have devoted so much time and attention to this important and interesting subject: to join them ought to be the wish of all who embrace the Obstetric branch of the Profession; and who knows, but to him may be entrusted the key of knowledge to some great and important event, that may help to cure, or, at least, alleviate, the agony of suffering humanity? Or, perhaps it may be his privilege to stay the hand of death, and gain even but one brief hour for the immortal soul of a dying sister, ere it bound over the barriers of time, and be launched into the ocean of eternity. Many are the reasons why this Institution should organise a Museum; and were it in abler hands to advocate the cause, and put it forward in its true light, many would see its utility. There is one grand and valid reason, at least, and that is—what Institution could afford as many opportunities as this for the collection of valuable specimens on the subjects connected with the *Diseases of Women and Children?* And we well know, that to be a good Physiologist, able to give an account of the skill that is in him; or a sound Jurisprudist, able to give a just verdict when character and life are at stake; or skilful Physicians, that will be able to help—not mar—nature in her cures, we must be practically acquainted with our profession, and be so familiar with the look and feel of disease, as to be able clearly to distinguish healthy from unhealthy structures; and a Museum ought to be a Repository of knowledge, wherein are kept the gems of practical experience; and, though, of course, some Preparations are far more valuable than others, there is not a single preparation in this Museum but bears strongly on some point essential to the knowledge of a good Pathologist, Physiologist, Jurisprudist, or sound Physician. I know many think that Midwifery is a very easy branch of the profession; but such persons can be only superficially acquainted with it; and I feel confident, if the mighty host of martyrs, the remnant of whose lives have been spent in protracted misery, caused by men who have taken the cure out of nature's hands, without having first acquired the knowledge to fit them for such a task; or, even if those who have been actually immolated at the altar of ignorance, were to appear in array before the young Physician, I feel sure he would *not* "lay the flattering unction to his soul," that Midwifery was *easy*. For proof of what has been said, the Preparations themselves are appealed to, even more than to the Catalogue; for, though it is earnestly trusted it may prove useful to the Student, by directing his attention to the prominent features of the Specimens, still, there is no doubt more might have been said; and what was said less liable to criticism. But, in the words of Dr. Hodgkin—"I will take on myself to affirm, that those only can be competent to apportion the censure which may be due, who have themselves experienced the labours of a similar task." The illustrious Harvey has been instanced as a diligent and successful labourer in the fields of science; let us, as we walk along with him seeking and searching on earth for the gems of knowledge, learn of him also to use the great privilege of "man to look upwards," and thus ascend by "creation's golden steps to Him," "in whom we live, and move, and have our being;" then, indeed, our knowledge will lead to power, and wealth, and peace; it will be a covenant between the wise man and his God, like that wondrous "bow in the cloud," which, though its base is on earth, the arch is lost in heaven. The Father of Medicine acknowledged the "cure was of God." Harvey, "that even *in the little edifice of a chicken, and in all its actions, the finger of God, or the God of nature revealed himself*; therefore, it is not beneath the modern Physician—he who calls himself a Christian, to "acknowledge the omnipotent God" and most high Creator to be everywhere present, in the structure of all creatures living, and to point himself out by his works, whose instruments the cock and hen are in the generation of the chicken; for it is most apparent, that in the generation of the chicken out of the egg, that all things are set up and formed with a most singular Providence, Divine wisdom, and an admirable and incomprehensible artifice."

CLASSIFICATION.

Respecting the Order and Classification of the different Preparations contained in the Museum, the simplest arrangement has been adopted; for in a collection like the present, perpetually on the increase, and many links as yet incomplete, no scientific or fundamental arrangement has been attempted.

Each Jar is marked with a Number denoting the place it holds in the Catalogue; the Figures run continuously through all its Sections, but a few blank spaces are left on purpose to receive the additions, which, from time to time, may be made, so as to complete the different series.

In the Normal department, the several specimens are distributed in such a manner, that those illustrative of the Anatomy of the Generative Organs of Woman, in their *unimpregnated* state, may come first; and then a gradual descent is made through the various grades of Animal existence, exhibiting the structure and development of the reproductive system, through the different modifications it presents in the long series of animated creation, to the lowest or simplest in the scale. Some specimens of Plants also are preserved.

When we come to trace the reproductive system, *under the influence of impregnation*, we commence at the lowest and simplest, till we come to Woman, Nature's last and most perfect work.

In preparing the Pathological part of the Catalogue for the press, every exertion has been made to secure an accurate report of the previous history of the case during life, and the recent Pathological appearance at the time of the *post mortem examination.* The account given of each is from the most authentic sources, either from the verbal or written communication of the Donor, or some printed statement authorised by him; and this opportunity is taken to thank the gentlemen who have so kindly contributed the specimens to which the name is attached. Some Preparations in comparative

Pathology have been added, and the donation of such specimens are earnestly requested, as they may lead to some important elucidations in human Pathology. In the arrangement pursued in this Classification, the Male Organs of Generation have been put in juxta-position with those of the Female of the corresponding animal, not only to show their admirable adaptation and fitness under the different circumstances of copulation, but also to exhibit, how that even in man, from their symmetrical arrangement, anatomical pecularities, &c., they may be considered as formed on the same fundamental type, which is still more apparent in the early stages of embryonic life, when the human germ cannot be discerned from that of the beast of the field; and it is only after the child has emerged about five or six weeks from his "single cell" (as likewise may be said of all plants and animals) that "any difference can be detected between the testes and ovaria;" indeed, every animal passes through *some* change in the progress of its development from its embryonic to its adult condition; and it seems to be a general law of the organic creation, that in the evolution of each of the individual organs of the higher tribes a series of conditions is passed through which bear an evident analogy with those that are permanent in the lower scale. And in the human embryo, the circulatory nervous, respiratory, reproductive, &c. systems, at different periods, present the successive characters peculiar to the fish, reptile, bird, and mammiferous animals, in their adult state. To follow these successive phases of the human embryo, through the different grades of animal life, is a profitablo as well as an interesting point; and it will also repay the Pathologist and Practitioner's trouble to trace throughout animated creation, the transition from one type of structure to another, and the progressive development, separation, and changes of the sexual and other organs, down to those simple beings, whose function of nutrition or extension of their body seems also the reproduction of their race. Beyond this, there is a point where we as yet seem to tread on the very confines of knowledge possible to man, and can but get glimpses along avenues, which are speedily closed by impenetrable obscurity; but a brighter hour may come; and to him who will throw an additional light upon any one subject connected with the "diseases of women and children," for which this Hospital was founded, so that it will lead to the happiness or health of the child or mother, or will find a cure, or even an alleviation for one disease peculiar to them, to him shall be given a just reward of praise, and the heartfelt blessings of his brother man.

A TABULAR VIEW

OF THE

ARRANGEMENT OF THE PREPARATIONS,

WITH THE

LETTERS DISTINGUISHING THE SECTIONS.

PART I.—A., CONTAINS—

Copulative; or, External Organs of Generation;—and the Formative, or Internal, as uterus, appendages, &c., in Man and Animals.

PART II.—B.

Preparations, illustrative of the Anatomy and Physiology of the Pregnant Uterus in Man and other Animals; and also a series of Wax Models, the size of nature, of the Pregnant Uterus, illustrative of the Phenomena of Labour, and of the different Natural and Morbid Positions of the Fœtus.

PART III.—C.

Healthy and Morbid Anatomy of Placenta, Membranes, and Umbilical Cord, in Man and Animals; and also Specimens of disease of the Fœtus in utero.

PART IV.—D.

Preparations, illustrative of the Anatomy of the Embryo and Fœtus, in Man and Animals; and of those Organs peculiarly connected with Fœtal life.

PART V.—E.

Preparations, Casts, &c., of different forms of Monstrosity and Malformation, in Man and Animals.

PART VI.—F.

Preparations of Infantile and General Pathology; also Preparations of Normal Anatomy.

PART VII.—G.

Preparations and Casts, to illustrate the Pathology of Uterus and its Appendages in the Unimpregnated and Puerperal state; and also of the external Organs of Generation in Man and Animals. Under this head are also placed Diseased Pelvises, and Diagrams cut in Wood, of Morbid Pelvic Apertures.

PART VIII.—H.

Under this head are arranged all the Drawings, Plates, Diagrams, Books, &c, each subdivision being marked with a letter of the Alphabet, and also by the Roman capital H.

The following is a Chart, intended to exhibit a Synoptical View of the various forms of the Reproductive process occurring in different classes of Animals.

GENERATION.

By division of the maternal body into several parts, which form new individuals.

Propagation by division, among the Polygastrica Annelidans.

By the formation of an Embryo.

IMMEDIATELY

Where the Embryo proceeds from the body of the Mother, in the form of a bud.

Propagation by budding, as among the Polyps Sterelmintha.

MEDIATELY

By an Ovum which is produced

WITHOUT COPULATION.

Generation without sex.
Some Polyps, &c.

WITH COPULATION.

Sexual generation in which we have to distinguish

COPULATION OF HERMAPHRODITES.

SINGLE
in perfect Hermaphrodites — *Acalephœ Holothuria.*

DOUBLE
Mutual Copulation of two Hermaphrodites, — *Gasteropida.*

COPULATION
of two individuals, of different sexes— *Birds, Mammalia, &c.*

We have intentionally, in this view of the different modes of Reproduction, waved the subject—that "In the beginning God created" and "made the world, and all things therein," as we trust the primary origin is believed to have been of God; and also the subject of Spontaneous Generation, as it is still wrapt in the mists of speculative theories.

The following is another Table, intended to exhibit a View of the various forms of the Reproductive process, it is something similar to the preceding.

- REPRODUCTION.
  - *Non-Sexual*
    - Fissiparous, 1
      - Parent Splits, each part a new animal.
        1. Transverse.
        2. Longitudinal.
        3. Irregular.
      - Parent splits and discharges the young.
    - Gemmiparous, 2
      - Budding upon the parent stock.
      - Separated buds. Gemmæ, or Sporules.
        1. On all parts of the body.
        2. On one part or organ only.
  - *Sexual*
    - Hermaphrodite
      - Both sexual organs on one individual.
        1. Self-impregnation.
        2. Mutual impregnation.
    - Diœcious
      - Oviparous, laying eggs which are hatched.
        1. External Fœcundation.
        2. Internal Fœcundation.
      - Ovo-viviparous, Eggs hatched within the natural body.
      - Mammiferous, Suckling the young.
        1. Monotrematous
        2. Marsupial.
        3. Placental, or strictly viviparous.

PART I.

A.

Under the head of A. are classed, in transcendental gradations, preparations of the external and internal reproductive organs in animals, when in the unimpregnated state; commencing with the *Uterus Simplex* of woman, in all stages of development and transition during intra uterine and extra uterine life, down to the sponges, (porifera of Grant) which animals seem on the very confines of the animal and vegetable kingdom. A few specimens of the reproductive organs, in the vegetable kingdom, are also added.

A. No. 1.—This preparation beautifully exhibits the immediate connexion which exists between the external and internal organs of generation, in the adult human female; and also the relative position which the bladder and rectum bear to them. Externally and superiorly we see the mons veneris, beneath is the clitoris, then the nymphæ, which are two folds of delicate skin passing downwards and outwards along the inner edge of the labia, the two folds of thick integument, extending from the pubis to within an inch of the anus. Close behind the clitoris, and a little below it is the orifice of the urethra, with a loop of crimson worsted passed into it; beneath lies the orifice of the vagina, the os externum of which, in the virgin state (see preparations 4—7), is generally partially closed by a fold, or duplicature of the mucous membrane which lines the vagina, and is called the *hymen*. The space between the vagina and anus is called *perineum*. The bladder, in this preparation, is seen lying superiorly and anterior to the organs of generation, to which it is connected by loose cellular tissue, and a reflection of the peritoneum. A section of this viscus has been made to show the urethra; a section also has been made of the vagina, to show the inside of that canal, which is about four inches in length—the parieties arethin, firm, and continuous, with the fibrous tissue of the uterus. The mucous membrane is corrugated, particularly on its anterior and posterior surface. The direction of this canal differs from that of the uterus, its axis nearly corresponding with that of the pelvic outlet, running downwards and forwards: the uterus *(uterus simplex)* and its appendages are also seen; and the rectum posteriorly, connected by loose cellular tissue and peritoneum to the vagina and uterus. Near the orifice of the vagina (at the upper part) its veins are well seen, being put on the stretch by loops of hair; they are a congeries of vessels, (plexus retiformis) which are capable of considerable distention, like the corpus cavernosum penis, and contract the orifice of the vagina when under excitement.

A. 2.—The external organs of Generation in an adult human Female.—In this preparation, a glass rod has been passed into the orifice of the urethra which lies between the two nymphæ, close behind and below the clitoris. It is surrounded by follicles, analagous to Cowper's glands in the male, which secrete a viscid mucous, and also by a thick layer of cellular tissue, and a plexus of veins, which give the urethra "the feel of a soft cylindrical roll at the upper part of the vagina; and in employing the catheter, by tracing the finger along it, the orifice will be easily found."

A. 3.—Wax model of the Female Perineum, in which are exhibited the orifice of the urethra,—the vagina, partially closed by a crescentic fold of mucous membrane, termed hymen,—the clitoris, covered by its prepuce, from which, descending along each side of the vagina, are the nymphæ; and, external to these, the labia. The integuments and fascia are removed so as to bring in view the sphincter ani muscle, the transversales perinei, the erectores clitoridis, which are analagous to the compressores penis, and the sphincter vagina, which corresponds to the ejaculator seminis in the male. This muscle extends from the clitoris superiorly around each side of the vagina to the central point of the perineum, in front of the anus.

A. 4.—The External Organs of a Child, shewing the hymen and meatus urinarius. *Dr. Bull's Collection.*

A. 5.—External and internal organs in the Adult human Female. The bladder and fore-part of the vagina have been removed, to show how the vagina passes behind and above the os uteri posteriorly. The fore-part of the uterus has also been removed to show the corrugated state of the cavity of the cervix. It also exhibits the relative position of the uterus and rectum. From the left fallopian tube is suspended a small cyst, attached by a pedicle, which is frequently observed in this situation. In this preparation is also seen the meatus urinarius and the hymen. The entrance to the vagina is unnaturally contracted.

Presented by Mr. Francis Elkington.

A. 6.—This preparation is a section of the pelvis of a child at birth, divided in front at the symphysis pubis; behind, in the mesial line of the spinal column, with sections of the bladder, vagina, uterus, and rectum at the middle line. This preparation also exhibits the reflection of the peritoneum, as posteriorly opposite the lower third of the sacrum it passes from the rectum to the upper and back part of the vagina, and then ascends over the uterus forming a cul. de sac between these organs and the rectum. At each side of the uterus it form the broad ligament which support the ovaries and fallopian tubes; it is then reflected from the fore-part of the uterus to the back of the bladder, from the superior fundus of which it passes to the abdominal muscles. The direction also of the urethral outlet (which has a crimson thread passed into it), and that of the vagina and rectum are seen. A section of the kidney, and its large superrenal capsule, has been made; and the sheath of the spinal cord opened to show the cauda equina, &c., &c.

A. 7.—The external and internal female genital organs of a child, shewing the hymen, meatus urinarius; the rectum, uterus with its appendages, and the bladder distended.

Dr. Bull's collection.

A. 8.—In this preparation the posterior walls of the pelvis have been removed, leaving the anterior bones (pubic) attached in their natural position, to show the relative connexion they bear to the external and internal organs of generation, which are here well exhibited, together with the bladder, rectum, and remnant of the umbilical cord, vessels, &c. The origin of the round ligaments from the sides of the uterus and their final distribution into the cellular tissue and substance of the mons veneris and upper part of the Pubis are well seen.

A. 9.—This preparation beautifully exhibits the external and internal organs of generation, in the fœtus at birth, in situ; anteriorly is seen the bladder and the divided arteries, with a bristle passed into each; behind lies the uterus with its broad ligaments, ovaries, and fallopian tubes; more posteriorly, lie the two ureters, with bristles passed into their open orifices. In this prepration, the round ligaments are seen to rise from the sides of the uterus, close beneath and a little anterior to the uterine extremities of the fallopian tubes; they then pass between the two layers of the broad ligaments to the external opening of the inguinal canal, and having passed through the abdominal rings, diverge into numerous fasciculi and fibres, and are gradually lost in the cellular substance of the mons veneris and upper part of the labiæ. The rectum, the iliac artery at its bifurcation, the external organs of generation, and hymen are also well seen. *Mr. Francis Elkington.*

A. 10.—The uro-genital organs of a human male fœtus, the testicles at this early period of fœtal life, lie in the abdomen near the kidney, and are supplied by the same vessels (spermatic) as the ovaries in the female,—(see preparation 11)—occasionally these organs remain permanently in the abdomen, as they do in some of the lower animals, which would seem to be an arrest at that period of existence when the male and female organs are so alike.—See preparation 19.

A. 11.—This jar contains a very successfully injected preparation of the uro-genital organs in a human female fœtus, between the seventh and eighth month; superiorly we see the funis with its vein and two umbilical arteries, the former passing into the liver, the latter descending on each side of the bladder; which viscus, in early life, is of a pyramidal form. Behind the bladder and connected to it by cellular tissue and peritoneum, is the uterus and its appendages. The spermatic vessels which supply the ovaries and fallopian tubes are shown. Posteriorly is the rectum, the vessels of which are well filled; this latter tube is connected to the uterus by peritoneum (which here dips down forming a deep fossa) and cellular tissue; superiorly and behind the peritoneal covering, are the kidneys and their supra renal capsules. In this preparation the glans clitoridis is beautifully injected.

A. 12.—A four months fœtus, with the abdominal parieties removed, showing the relatively large size of the uterus, ovaries, and clitoris.

A. 13.—The uro genital organs of the female fœtus in situ, the right lung and thymus gland are also preserved.

A. 14.—Dissection of the pelvic region of a human female fœtus, about three months, showing the state of the uterus, with the fallopian tubes and ovaries, at that period of intra-uterine life. The sacrum is removed and the rectum thrown down to show the uterus more distinctly lying between that intestine and the bladder. In this preparation are also seen the anal opening and external organs of generation. At this age the male and female external organs are very much alike, the clitoris is so very prominent,—on looking closely the glans clitoridis can be seen to be covered with a thin membrane or loose fold of skin, viz.;—the preputium clitoridis. It is a highly nervous and vascular organ, as seen in preparation 11, and, like the penis of the male, is composed of two crura or corpora cavernosa, and admits of considerable distention. These are contained in a ligamentus sheath.—See preparation, G. 485.

A. 15.—A vertical section of the external and internal organs of generation, in a female human fœtus, in the fourth month, exhibiting their natural relations with the bladder and rectum; the valvular arrangement of the latter organ is also seen. The right ovary lies in the iliac fossa, and is largely developed at this early age; the fallopian tube is pushed behind the ovary to show the round ligament descending to its insertion in the mons veneris. The bladder lies anteriorly close against the ossa pubes. The vagina and uterus lie between the latter viscus and the rectum. At this age the vaginal tube is more than relatively wide (see preparation A), the os uteri is just beginning to develope itself, but the parieties of the uterus are thin and of an equal thickness throughout, and still retain the tubular type of the lower class of mammalia.

A. 16.—A female fœtus about three months. An anterior section has been made, the heart and lungs are left in situ, the choilopoietic viscera have been removed to exhibit better the uro-genital system. The kidneys and their large capsules are seen in the lumbar region, below these in the iliac fossa, are the ovaries largely developed at this time of intra uterine life. Between and below the ovaries is the uterus, behind this organ lies the rectum, anterior to the uterus lies the bladder. In this preparation is well seen the projecting state of the clitoris, which has sometimes given rise to a doubt as to the sex. The urethra traverses the clitoris, which we find to be the permanent state in certain lower animals, as the lemur mole, &c., by a deep groove on its under surface.

A. 17.—A small Female Fœtus, with the abdominal parieties removed, to show the intestines, kidneys, &c. The ovaries and uterus are also to be seen. The latter organ, at this period, is quite bicornuated.

A. 18.—A Female Embryo. The thoracic and abdominal walls have been removed, to show the heart and lungs. The heart seems as if two were merely in juxta position, which is still more apparent in A. 20. The kidneys are also present, with their enormous supra-renal capsules, beneath which organs lie the uterus and its appendages. The ovaries are very large ; and the angles of the uterus are like those of some of the lower animals.

A. 19.—This beautiful preparation was taken from that contained in jar B. 118. In this fœtus, the brain and spinal cord can be traced through the almost transparent integument, the posterior portion of the spinal column not as yet having become ossified. Within the cavity of the thorax are seen the lungs and heart. This latter organ is in that stage of development in which " the growth of the septum, in the interior of the ventricle, is accompanied by the formation of a notch, or constriction, on the outside, by which the apex of the heart is rendered double for a time." (See Dr. Allen Thompson, on the vascular system in the fœtus of vertibrate animals). The kidneys, with their large renal capsules, are very plainly to be seen ; and beneath these are the ovaries and uterus, still in a rudimentary state, being bicornuated like some of the mammalia. The round ligaments are seen attached high upon the cornua, and almost appear to perform the office of gubernaculi to the ovaries. The clitoris is also very prominent. *Mr. F. Elkington.*

A. 20.—Human Fœtus, still younger than the last. (which see.

A. 21.—Human Female Fœtus, at a very early age; and in this case, from being opened, and suspended in a round jar, it appears larger. There is a very short cord, large head joining the body at a right angle, little buds marking the site of the extremities, and the heart is in that progress of its development when it exhibits that form which is permanent in some of the inferior classes. The ovaries are very large, in proportion, long and placed immediately beneath the kidney (see preceding preparations; and the uterus consists, at this early period, of two long cornua, like two tubes. And most probably, those cases which are recorded of double uterus, were caused by an arrest at this age.—(see double uterus, preparation A. 38.)

Mr. Francis Elkington.

A. 22.—The Uterus and Vagina of a human Fœtus injected and laid open posteriorly, to exhibit their great vascularity.—The uterine appendages are also well injected. In this preparation we see the close connection which exists between the vagina and the uterus; and (along its cut margin) how closely its mucous lining is united to the fibrous tissue underneath. The remarkable projection of the rugæ of the vagina are also well seen, which is particularly so in the virgin state. These rugæ run in a transverse oblique direction, and are gathered together on its anterior and posterior surface, forming the "columna rugorum, anterior and posterior." These appear to be a continuation of the corrugations which form the arbor vitæ in the cervix of the uterus, which, in this preparation, is beautifully seen.

A. 23.—Longitudinal Section of a human Uterus, at an early age. The bicornuated development is still retained. The ovaries are very small.

A. 24.—Uterus and Vagina of a Fœtus at birth injected. The vagina has been opened to show the os uteri, and the rugæ of the vagina, which are remarkably prominent. The uterus has been opened posteriorly.

A. 25.—Uterus and Appendages of a Child, 14 days old. In this fœtus the ovaries are very large, and present that smooth homogenous-looking appearance peculiar to the early stages of fœtal life. Bristles have been passed up the fallopian tubes, nearly all the way. This canal is not pervious during the early months of fœtal life, the abdominal extremity being closed and rounded; but they appear to open about the fourth month. The canal is relatively larger the younger the embryo is, but is easily demonstrated at this time. *Mr. F. Elkington.*

A. 26.—Uterus and Appendages of a Child, 14 months old. In this case the uterus is larger, but the tubes are not so long, nor the ovaries so much developed as that at 14 days; and it still retains the character of the uterus before birth, "the cervix being thicker than the upper part." *Mr. F. Elkington.*

A. 27.—Uterus of a Child about 7 years old. In this preparation the ovaries are very small, and the fallopian tubes short, the neck of the uterus is long, and the arborescent looking rugæ extend up very high near the body, which, at this age is generally "only a third part of the whole uterus; and the uterine parieties are nearly of an equal thickness."

A. 28.—Uterus not larger than that of an infant, taken from the body of a girl who had reached her 16th year, without menstruating, or manifesting any of the usual characteristics of the female constitution at that age; it is remarkable, however, that the ovaries are well developed.

A. 29.—Uterus of a young Girl laid open to exhibit its cavity. *Dr. Bull's Collection.*

A. 30.—Uterus of a young Woman. Most probably there was an arrest in the development of this organ in fœtal life; for, "at the fifth month the cervix becomes thicker than the upper parts."

As in this case the body and fundus are not half the ordinary size; indeed, not as large as the child at birth; but the os is preternaturally enlarged, and has a partial fissure in it.

A. 31.—This is a very good specimen of the human Uterus and its Appendages, at full puberty, taken from a Girl of 15, in whom all the characteristics of the female constitution, at that age, were fully established. The uterus measured in length, 2¼ inches; in breadth, 1¼ in.; and was ¾ of an inch in thickness. It is of a pyriform figure. Its upper portion, which is the largest at this age, is triangular, becoming gradually smaller inferiorly. The vagina has been removed, to exhibit the os uteri, which has a crimson thread passed into it. Posteriorly we see the two ovaries, which are well developed: they are of an oval figure; the anterior and posterior surface is convex; the superior margin is also convex, the lower edge somewhat concave: they are nearly an inch-and-half in length; the greatest breadth is, at that part, farthest from the uterus, to which they are attached by the ligamentum ovarii, or duplicature of the broad ligament, which also forms the indusium, or outer peritoneal covering. In the virgin state, these bodies are generally smooth; one has been opened to exhibit the graafian vessicles, more anteriorly, lie the fallopian tubes, which are about five inches in length; their free, or abdominal end, is the widest, and is funnel-shaped. It is also surrounded by fimbriæ, and has been called "morsus diaboli;" the other end opens into the cavity of the uterus, at the angle which the fundus forms with its sides; immediately beneath this connection, and a little anterior, arise the round ligaments. *Mr. F. Elkington.*

A. 32.—Human Uterus, very minutely injected. An anterior section has been made, and two bristles have been passed into the uterine orifices of the fallopian tubes. On its posterior aspect, the os uteri is seen with a bristle passed into it, and minutely injected; the ovaries and tubes are also well injected. From the top of this uterus grew a small fibrous tumour, with a narrow pedicle, which is well supplied with vessels from the uterus, and has been injected from this organ.—(See preparations, G. 449, 452.)

A. 33.—Uterus and Appendages of a Woman, aged 42. She had been married 23 years, and was the mother of three children, the last was seven years old, and there was an interval of from seven to eight years between the birth of each child. She died of acute inflammation of the lungs, rather suddenly. On examination, after death, there was seen a bloody discharge, escaping from the cavity of the uterus. The fallopian tubes, particularly the right, and the ovaries, were very vascular. On making an anterior section into this organ, the os was found healthy and pale; but the structure of the uterus seemed rather softer and fuller of blood than it usually is except when under the menstrual influence; the upper part of the cavity also was found lined by a half gelatinous bloody fluid, and the mucous membrane appeared more velvety, and softer than it generally does in the healthy uterus, when not under this specific action. This preparation was brought before the Pathological Society, and elicited some discussion on the theory of menstruation. The Donor thinks it supports the opinion of Dr. Power. This uterus presented, in many parts, membranous bands, the result of inflammation; indeed, the left ovary and tube are blended into one mass, so as to preclude conception on that side. Had that, however, been possible, extra uterine pregnancy must have been the result. Madame Boivier considers this as one cause of barrenness. *Mr. F. Elkington.*

A. 34.—Uterus of a young Girl of 17, who died " a slow sudden death." She was within a few days of her menstrual period, which was regular. The mucous membrane was soft and velvety, and the ovaries and tubes were very vascular: the latter, of an unusual length, and the canal wide. One ovary has been opened to show the parenchema of the organ, which is quite gorged; on the other is a graafian-vessicle, in a very highly developed state. Bristles have been passed into the spermatic arteries, which supplied these organs.

A. 35.—Uterus and Appendages minutely injected. The posterior wall has been removed, to show the cavity of this organ, which is of a triangular shape, its base being directed upwards, the superior angles corresponding to the points where the fallopian tubes enter it, into the mouths of which bristles have been passed. The cavity of the uterus is most contracted at that part where the cervix is united to the body, which here forms the os internum, and is better seen in some of the lower animals : below this it widens a little, and then contracts again at the os externum. The mucous lining of the upper part, or fundus, is smooth and continuous with the inner lining of the fallopian tubes. But the mucous lining of the cervix is corrugated and uneven, forming, on its anterior and posterior wall, a number of delicate rugæ, diverging in an arborescent form, and hence called the "arbor vitæ." The lips of the os uteri, in the virgin state, are smooth, and the mucous lining becomes continuous with that of the vagina.

A. 36.—Uterus of a Woman in middle life, and who had borne a good number of children. The walls are thicker, and the vagina wider : the ovaries, also, have lost the smooth surface of the young virgin uterus. There are traces of inflammation, and that produced the obliteration of the tubes, one of which is dropsical ; this alteration, of course, must have taken place subsequent to impregnation.

A. 37.—Longitudinal Section of the Uterus and Vagina, taken from a patient who died while labouring under severe uterine irritation. This organ is considerably enlarged, and its fibres rendered much more conspicuous than in the natural state. The fallopian tube has been opened to show its canal, the lining membrane of which seems highly developed, as does also that of the cavity and neck of the uterus.

A. 38.—This is a very rare and valuable specimen of a human double, or double-bodied uterus. It was removed from a woman who died of puerperal mania, a short time after parturition. There was no remark made, during her life, of anything peculiar in her generative system; but on examination, after death, not only were there found numerous fibrous tumors developed in the tissue of the uterus—(see preparation G.),—but it also was discovered to be a double organ, like some of the permanent types in the lower animals (as the Guinea pig), where the cornua are blended at the lower part, and open into the vagina by a single aperture. The right chamber is the largest, and was the one impregnated; and in the corresponding ovary there is the remains of a corpus leuteum. The left chamber is the smallest, yet it has its appropriate tube and ovary; the os and cervix are common to both. Whether from subsequent inflammation, or sympathetic irritation, (as takes place in the cow, sow, &c.); the lining membrane of the left chamber is in a peculiar state, much like what takes place in the cavity of the uterus, in extra-uterine fœtation. This double state of the uterus is believed to give origin to super-fœtation. This uterus seems to have been arrested at that stage of its development when it was passing through one of those phases which are permanent in the lower animals. (See Cruvelheir maladies de l'uterus (vices de conformation. Uterus bifides et cloisonnes;) also, Boehmer observat anatomic, rariores obs. v. de utero humano bifido et Bicorni cum vagina duplici; and Recherches Anatom. et phys. sur les cas d'Uterus Double et de Super-fœtation. Paris, 1826. Also Haller's work on these subjects.

Donor, Mr. Harmar; presented through Mr. F. Elkington.

A. 39.—Bladder,—external organs of generation, uterus, and its appendages removed from one of the simiæ; it presents the triangular form, and is of a firm consistence, like the human uterus. In some of this class of animals and the edentata, are found the nearest approach to the "uterus simplex" of woman; but in others, the cornua, or superior angles, are more developed, and therefore the term "uterus biangularis" has been applied to it.
Dr. Merryman.

A. 40.—The external organs of generation, vagina, uterus, and its appendages, bladder and rectum of a Monkey. Anteriorly and superiorly is the clitoris, below it is the orifice of the vagina, and more posteriorly the rectum. A bristle has been passed up through the vagina into the orifice of the urethra, which canal opens into the vagina high up. This latter tube has been opened posteriorly, to exhibit its lining membrane and the os uteri. In the quadrumina and edentata, we have the first gradual digression from the "uterus simplex" of woman: for, towards the upper portion, in the neighbourhood of the fallopian tubes, there is an obscure division into two parts, which is still more strongly marked in the lemur tardigradus; and the uterus begins to put on the double formation found in other animals, by passing imperceptibly by wide funnel mouths into the fallopian tubes. (See Cruvelheir Plates, Vices de Conformation Uterus.)

Presented by Mr. F. Elkington.

A. 41.—Uterus of an Ass—"uterus bifundalis." (See prepartion, B. 110.) In this class of animals the uterus is removed still farther than the last from the "uterus simplex" of woman, it being double at its fundus, the cornua appearing as appendices, into which a portion of the membranes extend.

A. 42.—The unimpregnated uterus of a Sheep—"uterus bicorporeus." This is the conformation chiefly found in the ruminantia. The vagina has been removed, to show the os uteri; and a section has been made into the posterior part of the uterus, to exhibit the state of its internal lining, on which are seen the little permanent uterine caruncles: these are supposed to supply the maternal part of the placenta in these animals, as no decidua has been found in them when in the puerperal state. (See preparation, 106.) A loop of silk has been passed into the entrance of the other cornua of the uterus; and a section has been made into each ovary. The fallopian tubes are well seen, through which a large bristle was easily passed.

A. 43.—External organs of generation, vagina, uterus, and its appendages, portion of the umbilical cord and bladder of a fœtal Calf. The vagina is very much dilated, and the uterus is just passing from the tubular state.

A. 44.—Uterus of a fœtal Lamb, in situ, the ovaries are high up under the kidneys, and are largely developed.

A. 45.—The unimpregnated uterus and appendages of a young Sow injected. Two different coloured threads have been passed into the os internum of each uterine cornua; below is seen the os uteri opening into the vagina, the mucous lining of which is greatly corrugated. These animals have no uterine caruncles, nor any apparent distinct placenta.—(See preparation, 111.)

A. 46.—The uro-genital system of a female Porcupine—*histrix cristita.* The kidneys, with their supra-renal capsules, ureters, and bladder, are present. The external orifice of the urethra opens by a distinct mouth, a little below the clitoris, which, in these animals, is large and peculiar. Internally is the rectum, and between it and the orifice of the urethra, is the vagina, which has been opened posteriorly to exhibit the os uteri; the cervix is short and thin, the uterus then bifurcates into two tubes, at the end of which are the ovaries.

Presented by Mr. F. Elkington.

A. 47.—External organs of 'generation, bladder, rectum, vagina, uterus, and appendages, of a full-grown Martin. The orifice of the urethra opens just within the vagina, into which latter canal a bristle has been passed. The chief portion of the uterus is composed of two long cornua, which are very membranous, except just around the os uteri. Among the carnivora and rodents are found the uterus, termed "uterus bicollis." In these animals the ova do not reach the common cavity, but remain each in its separate cornua. On each side of the rectum are two glands, supposed to assist these animals in finding out their male.

A. 48.—Uro-genital system of the male Hedgehog (erinaceous europeus). In these insectivorous animals, the testes are the same as in other classes of mammalia; but the vesiculæ seminales are very large, and composed of bundles of long and tortuous secerning vessels folded on themselves; the prostate is peculiar, and " Cowper's grands" are composed of convoluted tubes, whose ducts open by distinct apertures into the floor of the urethra.

A. 49.—Uro-genital system in the male Mole. The reproductive organs of the insectivora—(see also preparation 48) offer some remarkable peculiarities. In these animals, as the season of pairing advances, the testes, like those of the sparrow—(A. 64)—become greatly developed ; it would almost appear to force this subterranean hermit in search of a mate. The testicles, in the male, never appear externally, but the abdominal cavity extends beyond the pelvis, as far as the first four coccygeal vertebra, which, in fact, do not, properly speaking, constitute the tail. The terminal portion of the penis consists in a small bony appendage, covered slightly by integuments. In the female mole, the urinary and genital orifices are quite distinct. The clitoris, which is of considerable length, and very much resembles the penis of the male, is pierced for the passage of urine, and this constitutes a true urinary penis ; beyond this is a transverse slit, of a slightly crescentic form, which constitutes the orifice of the vagina. In the virgin state, this vaginal aperture is said, by T. Bell, not to exist, the skin being tightly and perfectly drawn over the entrance, so that, in this state, there are but two openings—the urethral and intestinal. It is difficult to know a virgin female from a male mole, by mere external examination. It would almost appear that the penis of the male mole was constructed in the peculiar manner above related, so as to be enabled to perforate this tense covering in the female. Her abdominal cavity is also extended ; the uterus is large, and its cornua much convoluted. *Mr. F. Elkington.*

A. 50.—Uro-genital system in a female Rabbit. In this class of rodent animals, the term "uterus duplex" is applied to the uterus because it consists of two distinct tubes, having separate openings into the vagina. (See also preparation, B. 102.) In the organization of their reproductive organs, these animals testify a near affinity to the ovo-viviparous quadrupeds (ornithoryncus paradoxus and echidna), which are obviously the connecting link between the two grand classes of oviparous and viviparous (or placental) vertebrata. For full particulars of these interesting animals, and the marsupial, we are indebted to Professor

Owen, whose works see, as also those of Sir Everard Home, &c.

A. 51.—Ovaries and fallopian tubes attached to the uterus of a girl of 15. In this specimen the ovaries are healthy, but very large, particularly as compared with specimens 28 and 34, girls of the same age. A section has been made through the right ovary, to exhibit its structure. These bodies are analogous to the testes of animals, and form the chief characteristics of the female of all animals, and, without which, fecundation cannot take place; for if they are removed, as is often done in animals (and has been done in woman), to prevent sexual desire, procreation never takes place in them. However, one organ (as in males) is sufficient, as we see by the case related in Sir E. Home's work, where a woman had male and female children, and twins, though one side of the uterus was deficient. There is a similar preparation in Professor Montgomery's Museum in Dublin. —The ovaries are supplied by the same vessels (spermatic), and they are equally convoluted as those supplying the testes of the male. The ovaries, like the testes, have an outer covering of peritoneum, or indusium, and also a condensed firm structure, called "tunica ALBUGINEA of the ovary," enveloping the parenchematous tissue of the gland, called stroma, which is a dense laminar cellular tissue, of a reddish colour (see A. 38), and in its substance, are imbedded a number of minute eliptical ovisacs, (the 1-500th part of an inch) within each of which is a layer of granules surrounding a germinal vessicle, on whose walls appears a spot. There is one spurious corpus luteum, which is evidently formed by a thickened state of the graafian vessicle. Cysts are frequent in the parenchema of these organs, it being only a deviation from their natural functions.

A. 52.—Human ovary presenting externally a very undulating surface. In its structure are seen yellowish deposits in the graafian vessicles, which have been mistaken for corpora lutea; but the true corpora lutea are produced by impregnation alone. —See preparation A. 38, 58, B. 114, 127.

A. 53.—Human ovary; in the parenchema of this organ is a cell filled with blood, either from rupture of a vessicle, or perhaps, form exudation from its walls. Viewed in a strong light the cell seems to be surrounded by two coats in an engorged state. The empty cell underneath also seems to consist of two membranes. This was taken from a patient suffering from uterine excitement, and under such circumstances these cysts are often found.

A. 54.—A human fallopian tube inverted, the very narrow extremity, marked by a bristle, is its uterine extremity, which opens into that organ at the angle which the fundus forms with its sides, here it is very narrow. The other is its free and much larger extremity, it is funnel shaped, and well supplied with fimbriæ, which, during impregnation, grasp the ovary at that part where the vessicle bursts, and receives the ovum discharged from it, which is carried by a peristaltic action into the uterus. This tube externally is covered by peritoneum and internally by mucous membrane, which two amalgamate at its fimbriated orifice; between these two coats is a muscular structure, (see preparation 35) which is composed of two layers of fibres, an outer or longitudinal, and an inner or circular. This tube is well supplied with vessels (see preparation 33, 35) and is sometimes found greatly congested, and this may account for the case related by the late Dr. John Shaw, in which a young lady lost her life, of hœmorrhage from the fallopian tube: the blood being found in the abdominal cavity, and the lining membrane of one of the tubes for the space of about an inch and a half pointed with bloody spots. This preparation also beautifully exhibits the longitudinal rugæ of the mucous membrane, which lines this canal and those minute portions of that membrane, which by their cilliary movements, are said by Perkinje and others, to propel the ovum along into the uterus. This tube is analogous to the oviduct of the ovipora, and the ovum while passing through this canal receives one of its proper coverings, the chorion, which is evidently analogous to the membrana testæ of birds and the fluid which it absorbs is comparable to the albumen of the egg of the latter. The connection between the two is clearly established by what has lately been discovered by the ovum of the MONOTREMATA, (ornithorincus, &c.) Sometimes the ovum is arrested in its progress through this tube and gives rise to fallopian or extra uterine fœtation.—See preparation G. 463.

A. 55.—Human testicle, with its peritoneal coat and tunica albuginea; through the section we observe the testicle to be composed of a soft greyish or yellowish pulpy substance, which, when opened out and floated, as in the present specimen, is found to consist of numerous fine tortuous shreds or vessels of delicate texture, loosely connected towards each other. These organs form the chief characteristic of the male animal, and in them are secreted the *seminal animalculæ*, (or according to Treviranus and others, *Fibrils* analogous to those occurring in the Pollen of Plants, or in the development of the muscular tissue); these constitute the greatest part of the perfectly elaborated spermatic fluid. This fluid is characterised by the presence of these minute bodies which are possessed of independent motion, and are called *Spermatozoa.* These are different in almost every different animal, and in each species they seem to be constant and determinate. The contact of these with the ovulum in the female as of the Pollen in Plants, (see preparation B. 92) seems essential to its fecundity, as we see by the egg of the pullet, which is barren unless it has been impregnated by the cock. In many animals there are obvious means by which the contact of the spermatazoa with the ovulum is effected; in the higher vertebrata it is supposed to reach the ovarium, and has been seen, by Bischoff, upon the ovarium of a dog; and by Barry upon that of a rabbit. In Hybrids the sperm is absent or imperfectly formed, so that these animals are incapable of procreation. In man they are according to Buffon. 006, Part of a line ascending to Der Gleichen. 008, See Haller. Prevost, Dumas, Wagner, Baer, Dr. Sharpey, &c. A large bristle has been passed into the vas deferens.

A. 56.—Human testicle, injected with mercury, dried and suspended in turpentine.

A. 57.—Ovary of a cow, exhibiting a corpus luteum, pro jecting considerably from its surface.—See preparation 127.

A. 58.—A small portion of the cornu of the uterus of a cow, in the gravid state, with the fallopian tube and ovary. In this preparation a section has been made into the ovary to show the corpus luteum, which "appears a round body of a very distinct nature from the rest of the ovarium, has a yellowish cast, is vascular, tender, and friable, like glandular flesh."—See Anat. description of the human gravid uterus, by Hunter, M.D.

A. 59.—The ovarium and oviduct of the domestic fowl (gallus domesticus). The ovarium contains ova in all stages of maturity, connected together by narrow pedicles. The pedunculated ovaries or calyces, that have within them ova ripe for exclusion consist of two membranes, as seen in the preparation. The oviduct has been turned inside out to exhibit its lining membrane. A loop of crimson worsted has been passed into the orifice of the tube, which commences by a wide funnel mouth. Its lining membrane varies in texture in different parts, and ultimately opens into the corresponding side of the urethro sexual compartment of the cloaca.—See preparation B. 101.

A. 60.—The cloaca, lower part of the intestinal canal, kidneys, ureters, (with bristles passed into them) ovarium and oviduct of the hen. The female generative system of Birds differs from that of the other vertebrate ovipora, in not being symmetrically developed upon the two sides of the body; the right ovary and oviduct being atrophied, and although it does exist in a rudimentary form in the chick in ovo, yet it never is sufficiently developed to assist in the reproductive process.—However, Stenoris in 2nd, vol. of the act, Havn p. 226, and Morgagni's epist., anat xx., note 31, mention that two oviducts have been sometimes discovered in hens.

A. 61.—The cloaca, lower part of the intestinal canal, kidneys, ureters, testicles, and vas deferens of a cock (gullus domesticus.) The testicles are two oval bodies, invariably situated in the lumbar region. They consist of contorted and extremely slender tubes, (wherein the semen is elaborated,) contained in a strong capsule. The sperm-secreting tubules end in a slightly flexuous vas deferens, that opens into the cloaca by a simple orifice, into which a bristle has been passed. Two simple rudimentary vascular papillæ, at the termination of the vasa deferentia constituting the entire intromittent apparatus.

A. 62.—The Uro-genital system in the Drake. In most birds there is no intromittent organ, the vas deferens opening into the cloaca by a simple orifice, as seen in preparation 61, two simple vascular papillæ alone constituting the rudimentary penis in these birds. Copulation is effected by simple juxta position; but in the Ostrich—(whose penis is most like that of the mammalia) and the web-footed tribes which copulate in the water, the penis is much more perfectly organized. In the present specimen, the penis is protruded, and has the appearance of a cork-screw; but, when in a state of repose, is lodged in a pouch, under the extremity of the rectum, and curved so as to describe three parts of a circle. A deep groove runs along the whole length of this singular organ; and it is into the commencement of this groove, that the vasa deferentiæ pour the seminal secretion. Some of the females of birds, possessing a penis, are provided with a rudimentary clitoris, something similar.

A. 63.—A Sparrow opened to exhibit the testes in situ, and also to show how small they are in the quiescent state, or season when the reproductive organs are not called into action. This great law rules most animals also, when in their wild state; for otherwise, the intention of nature would be frustrated, since the inclemency of the season would destroy the young. So is it likewise in plants, most flower not till the proper season. Some Aphides, or plant lice, exemplify this law wonderfully, for they are ovo-viparous in the early part of the year, but viviparous as winter approaches: a provision evidently intended to secure the preservation of the embryo during the inclement season, the eggs remaining unhatched until the return of spring.

A. 64.—Another of these Birds of Venus, procured at the pairing, or breeding season, when the male reproductive organs are called into action. The testes are far more developed in this specimen than in the last.

A. 65.—Female organs of generation in the Serpent, or (ophidian reptile.) In these animals the ovaries occupy their ordinary position in the lumbar region, and are attached to the vertebral column by a broad fold of peritoneum. They are symmetrical on both sides ; in all other essential particulars the saurian chelonian and ophedian order of reptiles are like those of the feathered ovipora.—See preparation, A. 60. The oviducts are long and flexuous, commencing by a wide orifice, by which the germs are taken up : this part is thin,—lower down, where the investments of the egg are formed, it is thicker, and assumes a glandular character ; and finally, they open into the cloaca.

A. 66.—In these chelonian order of reptiles, the Turtle and Tortoise, the female system is so extremely similar to the ophidian, (65) that the same description will do. But the penis in the male of this class is much more perfectly developed ; indeed, we cannot fail to observe many beautiful illustrations of progressive improvement in the generative apparatus in the order reptilia, if we examine carefully ; for we know that, in most of the finny tribes, there is no fertilization of the ova, by actual coition. But, in the amphibious reptiles, the male, having selected his mate, clings to her back during the whole period of ovi-position, and fertilizes the eggs *in exitu*, not as it takes place in fish, subsequent to expulsion ; and in the higher order of serpents and lizards, the female is impregnated during the union of the sexes, which is accomplished either by a temporary eversion of the orifices of the spermatic ducts, as in some fowl, or by a regular intromittant organ, which is sometimes bifed, as in the rattlesnake. In the chelonian reptiles, the penis is much more perfectly developed, and constitutes an efficient intromittant organ. The two corpora cavernosa, which at first are separate, unite along the mesial line, and form a single organ, terminated at its extremity by a gland-like dilitation. There is no corpus spongiosum, or urethral canal ; but this organ is grooved, as in the ostrich, which groove, by erection of the organ, is converted into a closed canal, which receives the spermatic duct. This conformation reminds us of the occasional want of completeness of the urethra in man, arising from a stoppage of development on the median line.

A. 67.—The uro-genital organs in a female Chameleon (Lacerta chamelion.) The ovaries, which are seen in situ, in the lumbar region, are like a hank of beads; in all other particulars they are like the serpent (65). The complicated tongue of these animals, the heart, liver, and lung, showing its membranous and cellular character, the kidneys, cloaca, &c., are well seen.

A. 68.—In this jar are three male reptiles, to show their reproductive organs. The testes are situated in the loins, and these organs occupy the same position throughout the oviparous vertebrata. In the Chameleon they are like two round balls; in the Triton the testis consists of two pyriform masses, from which the seminal ducts are derived; these soon unite to form a single convoluted tube, through which the semen is conveyed into the cloaca. The kidneys and their excretory ducts are here placed further back; but the ureters terminate in the cloaca at the same point as the vasa deferentia. In the larger preparation, two other glands are present, nearer to the anus, which are apparently connected with the generative function; and their excretory ducts, likewise, open into the cloacal outlet.

A. 69.—The reproductive organs in the amphibious—(Batrachian, Cuvier)—reptiles. During the breeding season the Frogs pair; but, although the eggs are impregnated out of the body of the mother, as it is in the osseous fish, still the male mounts on the back of the female, and vivifies her eggs by the aspersion of the seminal secretion, as they are successively expelled in gelatinous chains. The "ovaria consist of festoons of highly vascular membrane, wherein the ova are secreted and fixed at the pelvis extremity of the abdominal cavity. On each side of the body, is a long and tortuous oviduct, the fimbriated commencement of which is firmly bound by folds of the peritoneum in the immediate vicinity of the heart." As yet, it is not known how the ova are conveyed from the ovaria into the orifice of the oviduct, unless they "first break loose into the abdominal cavity, as we find them to do in the lamprey and the eel." As the ova pass through the oviduct they become imbedded in a tenacious albuminous secretion (some of which, in the specimen, has escaped from the tube, and is condensed by the spirit); they are then lodged in a dilated portion of the tube (improperly called uterus), previous to their expulsion through the cloaca. In this preparation is also seen, the heart, membranous lungs, and the so-called urinary bladder, which, in the frog, forms a very capacious receptacle, having its upper part divided into two cornua, and is considered the unobliterated remains of the allantois of the embryo. (See these organs, also, in an isolated state in press D). In the male the testis is like that in the cuttlefish; the substance of the organ seems composed of merely blind terminations of as many seminal tubes. The seminiferous ducts arising from these, perforate the investing tunic of the kidney, upon which it is placed; and, according to Swammerdam, terminate in the ureters, which thus perform, likewise, the office of the vas deferens.

A. 70.—The uro-genital system in the Thornback, one of the chondropteregii. We find among this class of Fishes the first commencement towards that type which characterises the reproductive organs of all the vertebrata. In some of the shark tribe the oviduct is found to have a sort of uterine enlargement near its termination, where the ova are detained for some time, and in which they receive an additional assistance from the parent; this foreshadows the more complex provision in mammalia; as yet, however, there has not been discovered any distinct communication between the blood-vessels of the parent and those of the fœtus; but the membranes of the latter absorb, from the extremely vascular lining of the oviduct of the former. As we see in the specimen before us, the ovaries and oviducts are double; and when the ova escape from the ovaries, by the rupture of their parieties, they are received into a funnel-shaped tube, with a fringed margin, which closely embraces the ovary. The ova, after certain parts are super-added, are then discharged by this duct into the surrounding element. This tube corresponds with the fallopian tube in mammalia: in these fishes there is a large gland developed in the walls of the oviduct, designed to furnish the horny case—(B. 99)—in which the yolk and white of these animals becomes encased. Beyond this gland the oviduct expands into a capacious bag, which communicates with the cloaca. Into the two terminal openings of the oviducts bristles have been passed. More anteriorly is the lower portion of the rectum, with a loop of crimson thread in it; and close to the spine are the kidneys—a rudimentary pelvis is present. Towards the caudal extremity of the cloaca are two small orifices, which communicate with the cavity of the peritoneum, and which allow free ingress and egress to the surrounding element. Is this designed to enable the animal to alter its specific gravity ?—(as in the nautilus, &c. —or does the presence of water around the oviduct exert any influence on the embryonic germ, contained within, as we suppose it does in the Actenia, &c.? Dr. Görtner, of Copenhagen, has called the attention of anatomists to the existence of two canals in the vagina and uterus of the cow, and some other animals, These canals commence in the neighbourhood of the fallopian tubes, and open into the vagina, near the meatus urinarius ; they are always present, but are found more developed a short time after conception. In most of the cartilaginous fish the ova are fertilized by an actual congress of the sexes ; and most of the males are provided with claspers. The testes are large, and each consists of two portions—one, which has an excretory duct ; the other not. One portion is composed of numerous secerning vessels, that pour their secretion into a long and tortuous vas deferens, which, near its termination, dilates in a capacious reservoir for the semen, and, ultimately joining its fellow of the opposite side, end in a conical fleshy organ, constituting a rudimentary penis. The other portion of the testis has no excreting duct, but may empty its contents into the abdominal cavity, and pass out through the two orifices mentioned before ; as does the contents of the male lamprey. *Mr. Elkington.*

A. 71.—The ovary and oviduct of the Ray. In this class of fishes, the ova escape from the *surface* of the ovary, not from its *interior*, as in the osseous fish ; they are then received by the first and fimbrated portion of the oviduct which opens into the concave portion of the kidney-shape gland, that is attached to this tube : this organ seems destined to furnish some addition to the ovum ; perhaps the horny covering—(see preparation 99)—which invests the egg of these animals. Beyond this gland the oviduct expands into a capacious bag, which communicates with the cloaca. See preceding preparation.

A. 72.—Ovary of a Herring, one of the osseous fish. The reproductive organs in these fishes seem to be formed on quite a different type from those in the cartilaginous. In the female of the osseous fish the ovary, or ovarium, consists of a membranous bag, generally divided into two tubes, but sometimes single, as in the perch. Its lining membrane is folded into broad festoons, where the ova are formed and lodged—(see preparation, B. 98)—until sufficiently mature for expulsion; when ripe, they escape *into* the cavity of the ovarium; whereas, in the cartilaginous, it is from the *surface* of the ovary they burst, and are then expelled through the orifice of the ovarian sac, which is immediately behind the anus, and in front of the urinary canal. In osseous fish there are a few exceptions to this general rule; for the "Blennius viviparous" produces its young alive, the eggs being retained within the oviduct until they are hatched; however, the ovaries present the same appearance as in ordinary fish. In passing onward to the next group, the molluscus animals, we shall find that, in some of the lower classes of fish, the character of the generative system may be regarded as even lower than that which it presents in the higher cephalœpoda, in the Lampreys it is a laminated organ, composed of a cellular parenchema, or stroma, in the cells of which the ova of the female are found; and the spermatic fluid in the male; it extends down the spinal column, and, except at the time of pairing, it cannot be distinguished whether it is male or female: for there are no external characters by which to recognise them, there only being an opening behind the anus, through which are discharged the ova, when they burst from the ovary into the cavity of the peritoneum. The internal prolongation of this orifice constitutes, in the cartilaginous fish, the oviduct, which is analagous to the fallopian tube of the higher animals; whereas, the reproductive apparatus reminds us of what we find in the conchifera and other mollusks; only here the ova must be impregnated by the male. See next preparation.

A. 73.—The testes of a Herring, generally termed the " milt." In the osseous fish these organs generally equal, in bulk, the ovary of the female of the same tribe, and occupy a corresponding situation in the abdomen ; each testis is made up of a congeries of seminal canals, they terminate towards the surface in blind extremities ; but, by their opposite ends, they communicate with the general excreting duct. In the Clupea Alosa, and some others, the arrangements of the tubes may differ in some respects, (see Muller de penitiori structura glandulorum), however, in the osseous fish the vas deferens, or common canal, in every respect resembles the oviduct of the female. In some fish (as the Parr—the young of the salmon in the second year), the male is capable of the reproductive act, though far from his own full growth. In all osseous fish, except a few (as the Blennius viviparous), the seminal fluid comes in contact with the ova, after the latter have been expelled from the oviduct of the female, so that there is no actual congress, nor do the offspring appear to receive any assistance from either parent; however, a few (as the Gobius), are said to construct nests among the sea-weed, and watch the ova till hatched; and the male Syngnathic, or Pipe-fishes, have " a pouch on the under side of the body, formed by the meeting of two folds of skin, in this the eggs of the female are deposited," and remain for some time; and, like the young marsupial animals, swim around the parent, and again seek protection.

A. 74.—Generative system of the Cephalopoda. These animals are considered to hold the highest rank among the Molusca; they are diœçious, and the structure of the reproductive system is peculiar. In the female we find the ovarium at the bottom of the visceral sac, enclosed in a distinct peritoneal investment; it consists of a large bag, or cavity, and if this be opened at the breeding season, it is found thick and glandular; to a circumscribed portion of this, a cluster of little egg-shaped bodies, or ovisacs, are attached by short vascular pedicles, wherein the ova are secreted. These bodies, or calyces, consist of a portion of the glandular substance of the sac, with its lining membrane raised up by the development of the ovisac. When the ova are ripe, these calyces burst, and then discharge their contents into the general cavity : here is the first appearance of the calyx, which was described as developed from the external surface of the ovarium, in the oviparous vertebrata. From the general cavity of the ovarium proceeds the oviduct, which is single; but sometimes (as in the Caligo and the Octopa) divides into two. The walls of the duct are thin and membranous until near the external outlet, where they suddenly become thick and glandular, and in many genera, are surrounded with a very large laminated gland, through the centre of which the eggs have to pass, before they issue from the body. Here the dark corneous covering, for the preservation of the egg, is secreted. (See preparations, A. 70, B. 99.) In the male of these animals, the testes resemble the ovaries : it consists of a large sac, to a portion of which a bundle of branched cœca are attached; these burst, and empty their contents into the general cavity ; from this proceeds the vas deferens, long and tortuous ; it then enters a wider one, internally divided by imperfect septa, called by Cuvier, vesicula seminalis. It is joined, on issuing from this organ, by an oblong gland, called by Cuvier, prostate, and then communicates with a large muscular sac, very peculiar, and filled with white filaments. From this pouch of Needham, a short canal leads to the penis, a short, hollow, muscular tube, through which the fœcundating fluid is expelled. It is not known whether these animals actually copulate.

A. 75.—The reproductive organs in the gasteropoda (Patella, Snail, Buccinum.) The different stages of development, in the generative apparatus to be met with among the family of the gasteropoda is very various. This class may be divided, as far as relates to this function, into three divisions—1st. Hermaphrodite, and self-impregnating. 2nd. Hermaphrodite ; but reciprocally impregnating each other by mutual copulation. 3rd. And those in which the sexes are distinct, the female being impregnated by copulation with the male. As an example of the first class, we may take the Patella, the lowest specimen in the jar : in it we find the organs are very simple. The ovary, when empty, is found embedded in the substance of the liver; but at certain times it becomes much distended. From this ovary arises a simple canal, or oviduct, which terminates, after a short course, in the neighbourhood of the anus. No trace of accessary apparatus can be found; and the only part to which the office of a testis is assignable is the tube through which the ova are discharged. This may probably furnish a secretion subservient to the impregnation of the eggs. As a specimen of the second class, we may take the Snail, or Slug. The female portion consists of the ovary, which is a racemose mass, embedded in that portion of the liver which is enclosed in the last spire of the body, from this proceeds a slender oviduct, which terminates in a mass, regarded by Cuvier as the testis. Through this mass it is difficult to trace the duct; but, after it emerges from this, it expands into the womb (so called), which is a long and capacious canal, opening into the common generative cavity; in this (which, during the breeding season, greatly enlarges) the eggs are retained, until they have acquired their full development. The male organ censists of a testicle, which is largest at the pairing season: this consists of two portions---one, large and soft; the other, glandulated; the latter runs along the length of the womb; from the testicle arises its vas deferens, or excretory duct, which terminates in the penis, near the base of that organ. The penis is a large hollow organ, something like the tentacula of the animal, and, like it, capable of complete inversion; it is not perforated at its extremity; but, of course, when it is inverted, the orifice of the vas deferens is external. There are also three other superadded parts,—a sac, or round vessicle, which is invariably present, with a long duct leading to the matrix, called by Cuvier "the bladder," but supposed by the recent investigators to be an organ to furnish an envelope for the eggs. The second superadded organs, and which are almost peculiar to the genus Helix, are the "multifid vesicles;" they are two groups of blind tubes, or cœca, which uniting, ultimately form a principal duct on each side; these discharge their contents a little below the orifice leading into the bladder, into the passage by which the ova are expelled. The third organ, and one peculiar to the snail, "the sac of the dart," is an oblong sac, opening by a special aperture into the common generative cavity, and is capable of complete inversion; at the bottom of this quadrangular cavity is a four-sided fleshy tubercle, which secretes a four-sided calcarious spike, about five lines in length; when this sac is everted the dart is protruded externally; if this dart be broken off, it can be speedily reproduced. In some of the mammalia (as the Guinea-pig tribe) we see a much similar pouch attached to the male organs, wherein are lodged two long horny spikes, which become external by the eversion of the pouch, when the penis is erected; and in other of the Cavia, there are additional spikes. The general cavity, into which these organs open, when in their ordinary position, is a muscular bag, capable of inversion, and opening externally near the upper tentacle on the right side of the neck; into this cavity open the separate orifices of the penis, female organs and sac of the dart. (See Cuvier, Swammerdam, &c.) The third division of the reproductive system in the gasteropoda is well represented by the Buccinum—(see preparation, B. 96)—the testicle is of considerable size, sharing with the liver the smaller convolutions of the shell; from the testicle arises the vas deferens, which becomes convoluted, and then enlarges before it enters the root of the penis, through which organ it runs by a tortuous course to its extreme end. The penis is a large organ attached to the right side of the neck; it is not capable of retraction, but remains folded back in the branchial cavity. In the female there is no rudiment of such a structure; but the generative aperture is seen to be situated a little within the edge of the pulmonary cavity, being a simple hole leading to the oviduct. The ovary occupies the same position as the testicle in the male; and the vas defferens is represented by a thick and glandular oviduct. In a few of the gasteropoda (as the Paludina vivipara) the ova are retained in the oviduct until the young are completely matured, and pass out alive.

A. 76.—The ovigerous system in the female spider (Arachnida) is very simple, and consists of two elongated membranous saculæ, in which the eggs are formed and brought to maturity. The impregnation of the ova is evidently effected by the juxta position of the external orifices of both sexes, for there is no external intromittent organ perceptible in the male, whose generative organs consist of two long cæca lodged in the abdomen, and terminating by simple orifices, distinguishable on the under surface of the abdomen, near its junction with the thorax. The generative system on each side of the body, in the spider, exists quite distinct from its fellow of the opposite side, for neither internally nor externally do they communicate; in some cases it is even said that the eggs generated in the two ovaria are laid at distinct times.

A. 77.—The female organs of the scorpion are composed of loops of tubes uniting together at different points, and when distended, resemble a necklace of beads; they open by two canals (each having a succenturiate gland appended near its termination) through a valvular aperture seen on the ventral surface of the thorax; in the male there is a double penis, resembling the reptiles; this organ is protruded through an orifice similar to that in the female.

A. 78.—In Insects, though the tribes are very diversified, still there is a great uniformity to be observed in the general arrangements of the generative apparatus. The sexes are quite distinct. The internal generative organs are generally double; the genital outlet is single, and placed in the posterior part of the body. Sexual intercourse takes place but once, and then the male must have arrived at maturity; after which he generally dies. The ovigerous system in the female is double throughout the whole class, and the arrangement is tolerably uniform; they may be divided into the ovaries, oviducts, the spermatheca, the accessory glands, and the ovipositor. The ovaries are double, and composed of a variable number, from two (as in the melolontha) to 150 (as in the hive bee) of membranous tubes, arising from the oviduct, which canal discharges its contents into the cloaca, or in other cases, joins its fellow of the opposite side, and terminates by a distinct aperture, the accessory glands and spermatheca, having previously poured in their contents. The former glands are supposed to secrete a gelatinous fluid, with which the egg becomes invested before they are expelled from the body ; and the spermatheca is a receptacle for the seminal fluid of the male during copulation (see Home's lectures) ; the neck of this bag is surrounded by a sphincter, and is always situated on the upper aspect of the oviduct. The ovipositor is an organ adapted for the introduction of the ova into the best localities, for their maturition and nutrition ; it is very various, but particularly adapted to the habits of the animal. (See Kirby's and Spence's works) Some insects (as the Musca Carnaria, or) flesh fly, deposit living Larva ; and the (Hippobosca, or) forest fly deposits pupæ. Some (as the Aphides, or plant lice) are oviparous in the early part of the year, but ovoviparous as winter approaches. The male organs in insects consist of the testes with their vasa defferentia, the vesiculæ seminales, the canalis excretorious, and penis. The testes consist of cœca floating loose in the abdominal cavity ; they present a singular diversity of fo̊rms in different genera : yet, nevertheless, are constructed on similar principles. Appended to the excretory ducts of the testicles are found cœcal tubes, destined to provide an accessory secretion : these, from analogy, are termed vesiculæ seminales, and vary much in form. These and the vasa deferentia finally terminate in one common tube, the canalis excretorius, which communicates with the root of the penis ; this is a hollow tube, capable of being protruded from the anal extremity of the body, generally membranous, sometimes horny ; in some, the end is enlarged ; in other biped, or spoon-shaped (as in the wasp). In the Musca vivipara its apex is covered with spines. In some Diptora (Muscidæ) the females possess the retractile organ, or penis, the males having only a simple aperture. In the Dragon flies, in the male, this organ is placed under the anterior part of the elongated abdomen ; but in the female, the sexual aperture occupies the usual situation near the anus.

A. 79.—In the position and arrangement of the sexual organs (as in every other part of their structure), the Julidæ—(see next preparation)—and Scalopendridæ complete the transition between the Annelidens and insects, properly so called. The ovarian system in the female Scolopendra, is a single tube, apparently without any secondary ramifications, and occupies the *posterior* part of the body (as is the case in insects). The genital organs of the male are very complicated; the testes are seven in number, hollow internally, and each consists of two parts, precisely similar. From each extremity arises a narrow duct, so that there are 14 pair of ducts arising from 14 secreting organs; they end in a common tube, terminating by a simple aperture, near the anus, Just prior to its termination it receives five accessory glands.

A. 80.—In this animal, the Julus, the generative system occupies the anterior segments of the body, the sexual apertures being found upon the rings near the *cephalic extremity* (as in the (Annelidans), whereas in the scolopandridæ they are placed as in insects near the *anal* orifice.

A. 81.—Generative organs of the Earthworm. These animals are hermaphrodite, but the congress of two individuals is necessary to the fecundity of both; no organs of intromission have been found,—the testicles vary from two to seven, each testicle is fixed at the bottom of the ring in which it is placed by a short tubular pedicle that opens externally by a very minute pore, and all the testicular vesicles of the same side communicate. The ovaries are eight large masses, from which arise two delicate tubes or oviducts; these dilate at their termination, and open externally upon the sixteenth segment of the body. In some of the Lumbrici, in these ducts eggs have been found as large as pins' heads—each contains two germs. In general it is believed that in the Earthworm the ova do not escape through the ducts which seem to convey the spermatic fluid to the ovaria, but that in them as well as in the Arenicola and Aphrodita (see 81 preparation) the ova after escaping from the ovaria are retained in the cellular meshes which surround the alimentary canal, in which they are not unfrequently hatched, the young being most probably expelled through a tubular aperture at the extremity of the body. This condition closely resembles that which takes place in some of the Cyclostome fishes, between which and the Anneleida there seems to exist perhaps a closer affinity than between any other vetertebrated or invertebrated animals. The process of reproduction in earthworms has also a very striking analogy to that which we witness in flowering plants, for in the latter, the fertilizing influence is transmitted down the minute canals of the style, and the seeds escape when ripe by the separation of the walls of their envelope, Among the *Anneleidans* as well as the Infusoria, we meet with what is termed *fissiparous, generation* ; not only that kind of propagation of individuals by *division*, as also may take place in the HydraViridis, leech, &c. but also multiplication by *spontaneous division*. The Nais and Nereis at present afford the best examples. In the former a small portion separated from the tail becomes the new animal, before the actual separation of this caudal portion, it is marked off from the rest by a notch, and there are gradually formed on its sides, the joints, hairs, and other indications of the organs of the complete animal in minature, the notch enlarges, and the part at last drops off capable of independant existence.

A. 82.—A beautiful specimen of the Aphrodite Hispida, one of the Dorsibrachate Annelidans. In this preparation is exhibited the whole intestinal tragit, from mouth to anus, with its lateral cæca and the fassiculæ of brilliant coloured hairs, which adorn and protect it. But of the reproductive system of these animals very little is known (see Curvier Lecons de anatomie comparée) except that like the earthworm, the ova are retained for a time in the cellular meshes which run round the alimentary canal, and at certain seasons eggs have been found deposited between the lamina of its membranous scales to be exposed to the surrounding element. Milne Edwards, ann de sciences nat, vol. xxvii.

A. 83.—Reproductive system of the Tenia Solium (of the class sterelmintha); a distinct generative system is found in every segment of these animals. The ovigerous organs consist of a central cavity, from the circumference of which radiate a great number of cæcal tubes, these at certain seasons are filled with granular ova, from the central portion of this ramified ovary issues a wide duct, which may be traced to a prominent tubercle, placed on the lateral margin of every segment, where it terminates by a minute pore opening externally. This canal, which may be considered as the oviduct, is joined just before its termination in the pore, by a delicate tube, which originates in a small bulb or vesicle, and this most probably furnishes the secretion which fertilises the ova.

A. 84.—Epizoa taken from the Lophius Piscatorius, the two small saculi appended to the posterior part of the animal, are recepticles for the eggs, and into these the oviducts terminate. A similiar appendage is added to some of the female Entomastraca or minute crabs, in the cyclops, &c., though the impregnation of the ova takes place in the body of the parent, the eggs when formed are expelled into the oval sacs placed on each side of the tail, which Jurine calls *external ovaries.*

A. 85.—Hydatids in the liver of a Mouse, (see also preparation B. 82. These animals are believed to propagate by internal germules, which grow from the membraneous walls of the sack, and having attained a certain growth become detached, and are found floating in the interior of the parent. Some suppose that they are at first spontaneously generated; others that these Entosoa existed under some other form, but when introduced into the system their eggs are carried with the circulation to a nidus, where they inordinately grow from good food and warm temperature. As we advance further in this class of animals, we have a far higher order of a generative apparatus, and the whole class are interesting in a practical point. See preparation B. 93.

A. 86.—Specimen of the *Actenia* or fleshy polyps. In these animals the ovigerous membrane, which secretes the ova and to which they are in bunches attached, is contained in a cavity, lying between the digestive sac and the fibrous exterior of its body. This membrane is always bathed in water, for it communicates with the surrounding element through the tentacula, and it also appears to communicate with the cavity of the stomach by a minute aperture, through which, when mature, the young are supposed to escape; others think that they are likewise expelled through the tentacula. I have seen them escape fully, or apparently fully formed through the mouth. There is a very interesting paper by Sir John Graham Dalyel, on the subject of reproduction in these animals; he says, "they are not all viviparous through the mouth; in some preparatory to propagation irregularities appear in the margin of the base, it becomes indented, the offshoot enlarges and finally becomes detached, at first it is a shapeless mass, but after a time tentacula appear and it becomes like its parent; and that some of the compound ascidiæ as the Aphlidium Verucosum is originally an inert ovum, next an embryo endowed with an active locomotive faculty, which in the third stage is converted to an animal of a form absolutely different, and rivited to the same spot. These animals also can be made to multiply by division of their body.

A. 87.—This specimen (Tubepora Musica) is one of the compound Polyps, and of more apparently perfect organization than the following specimens:—These, in place of encrusting an internal solid skeleton, are enclosed in a calcareous tube, from which the animal is protruded. A sketch of the polyp, to which we shall refer, has been made, and placed in the jar, as it is so difficult to procure a recent specimen. These polyps live in society; but do not seem organically united, as do some compound polyps. From each tube issues a little membranous animal, of a green colour; the mouth is surrounded by eight tentacula (fig. 1. a.); alternating with the tentacles are eight triangular filaments (fig. 1. e) attached to a membrane which lines the tube; these filaments, on their inner surface, in mature individuals, are studded with ova, (fig. 2.) attached by short pedicles; each germ appears to consist of a simple gelatinous membrane, folded upon itself (fig. 4. c'), forming upon the stage a little tubercle resembling a naked zoophyte ; this tubercle gradually elongates, and assumes the form of a polyp provided with all its organs, the sac tube forming a membrane which encloses it, then diminishes in thickness, and become calcarious. There is also a specimen of the jointed coral. The structure and mode of reproduction of these corallidæ resembles the Alcyonidæ (see H. —), but the central axis is peculiar, being alternately composed of calcarious mosses, united at intervals by a flexible material, so as to preserve the slender stem by allowing it to bend under the passing wave.

B. 88.—The class Alcyonidæ of the compound polyps, such as the Cydonium, &c., may be looked on as intimately related to the sponges in the structure of the common body, differing from them principally in the polyps which occupy the cells upon their surface ; these polyps resemble the Hydra (see plate H.) but the number of tentacula around the mouth differ ; they also differ from the Hydra in having a reproductive organ or ovary, in which the germ of its progeny are developed. See plate of the alcyoneum exos, &c., in N. H.

A.89.—This specimen (the Fungia Agariceformis) of the group Madrephyllicœa, seems to be a grade lower than the preceding specimen ; it belongs to the class of Polyps, and forms a circular mass resembling a mushroom. When living in its native element, it is encrusted with a film of animal matter, dipping down into the interstices of the plates which are seen radiating from a common centre ; this gelatinous investment secretes, absorbs, and gives indication of vitality, and can contract itself between the laminæ of its skeleton so as to conceal itself from injury.—Reproduction in these polyps is effected by the development of sprouts, or gemmæ, which bud from the animal substance as buds issue from plants. The young fungiæ remain for some time fixed to the parent by a pedicle, till they attain to a considerable size ; then absorption takes place in the stem, and the young become detached.

A. 90.—The Sponges (or Porifera of Grant) seem to be on the very confines of the animal and vegetable kingdom. Their organization is so closely allied to both, that it is difficult to say precisely in which they ought to be included; however, they are now admitted by common consent into the animal series. The dried sponge is only the skeleton of the living animal. In its original state, every filament of its substance was coated over with a thin gelatinous film, possessing the power of extracting nutriment from the water around it, and secreting, as it extended itself, the horny fibres comprising the porous frame-work, or skeleton before us. The *multiplication* of sponges may take place by a portion, being mechanically divided into several pieces, every portion of which becomes a distinct animal. However, the ordinary mode of their *reproduction*] takes place as follows:—At certain seasons of the year there arise from the living parencheema, which lines the channels in their interior, granules or germs, from which the future race will spring; as soon as the gemmule is sufficiently mature, it becomes detached from the nidus where it was found, and is carried by the currents running through the parent sponge into the surrounding ocean: the young sponges then, by means of its innumerable vibrating hairs, or ciliæ, by which it is invested at this period of its existence, can voyage where its instinct leads it, and so convey itself to a new locality ere it settle down a fixed sponge, and become developed like the individual from which it sprang.—See plate H.

A. 91.—*See Appendix*—In adopting the primary division of the vegetable kingdom made by Linnæus into Phanerogamia—(Flowering Plants), and Cryptogamia—(Flowerless Plants), perhaps we shall do all that is required here; for, though there are some intermediate classes which exhibit beautiful transitions and connecting links between the structure of flowering and flowerless plants, (as the Rhizantheæ, &c.) still, as a general rule, the classes are distinct as to the *reproductive system.* In the lowest class, or Cryptogamia (as Ferns, Mosses, fungi algæ), *only one kind of apparatus* is necessary for the formation of the embryo; whereas in the Phanerogamia, *two forms of reproductive organs* are necessary for the production of the seed. These organs may exist on the same flower; but sometimes they are developed in different flowers on the same plant, which is then said to be Monœcious. When they are borne by different individual plants, the species is considered Diœcious ; or they may exist in a rudimentary form. The organs essential to the fertility of the seed are the two innermost floral whorls—the stamen and pistil. Yet, although these two seem essential, still the two outward whorls, the calix and corolla, and the nectory also,may effect some important office. In the case of double flowers, where all the stamens have assumed the condition of petals, seed is never produced ; but if the pistil be perfect, it may be supplied with pollen from another plant of the same species, and will then ripen its ovules. The *stamen* (or male organs) are generally composed of two parts—the *anther*, and the Filament on which it is seated ; this latter part sometime presents different appearances ; but the Anther generally consists of two lobes, or pouches, which contain the pollen grains ; when these are mature, the anthers burst along their length, transversely, or sometimes by a little opening at the end (termed pores), or by valves. The pollen grains are minute vesicles composed of two membranous coats, the exterior presenting various appearances, but always more or less spheroidal, or cylindrical, the inner one being an exceedingly homogenous pellicle ; some of the largest grains do not exceed 1-360th or 1-720th part of an inch in diameter ; and in some species they are not so much as the 1-2000. These pollen grains certainly must be considered as the direct organs employed in securing the fertility of the ovules. In the centre of the flower stands the *pistil*, which, although it frequently appears single, may be properly regarded as made up of separate parts, more or less completely united together. The pistil is composed of the *ovarium* containing the young seed, or *ovules*, at the base ; seated on this, or on a sort of stalk or column, termed *style*, interposed between them, is the *stigma*, or glandular summit, the function of which is now considered simply to convey to the ovules contained in the ovarium at its base, the germs liberated from the pollen grains. The ovarium is composed of a number of carpels, or of divisions more or less closely united together, each carpel being an organ analogous to a leaf folded inwards upon its midrib, so as to bring the edges in contact, which cohere and form the *placenta*, and upon this the ovules are produced. The ovarium presents different appearances in different plants. *The reproductive process* among the Cryptogamic tribes is carried on by one set of organs. The sporules (analogous to the pollen grains) are contained in peculiar cells, placed on the surface, or imbedded in the substance of the plant, or under the leaf connected with its veins. Among the higher families of this class the cells assume a distinct capsular form, termed *theca*, which has various characters in the ferns, mosses, &c. In its most perfect form, as in the fern, it is mounted on a little stalk, which is continued round its circumference, in the form of a ring; and this, by its elasticity, separates the divisions for the escape of the Spores when ripe. The cells, or cases which contain the sporules, among the inferior families of this class, are more simple in structure, and often resemble short closed filamentous tubes, or sacs, which ultimately discharge their contents by the rupture of one of their extremities. In the hymenium, or fructifying membrane of the Mushroom, are found certain elongated tubes lying side by side, which have received the name of asci, these contain the fertile cells, or spores, which enclose the granules, or real germs. The spore, like pollen grains, appears to consist of two coats, of which the outer one is somewhat dense, and the inner of extreme delicacy; the contained granules, when the spore is mature, may be seen to swim freely in the fluid which fills their cells.

PART II.

B.

This section contains Preparations illustrative of the Anatomy and Physiology of of the Human Uterus, when under the influence of Impregnation; and also of the Reproductive System in Animals and Plants, when propagating their species. In classifying this series of Preparations—Specimens of Plants come first, as among them we find some of the simplest forms of reproduction as yet known. Next in order come those Animals which are so nearly allied to them, that it is almost impossible to mark the line of demarcation between the Animal and Vegetable Kingdom. From thence we ascend through the several gradations, or types, which lead to Woman, the highest (we cannot say *most perfect*, for all are perfect) in the scale of animated nature. Under this head are added, also, a series of Wax Models, the size of nature, of the Human Gravid Uterus, illustrative of the phenomena of Labour, and of the different natural and morbid positions of the Fœtus.

B. 92.—*See Appendix.—Propagation in the vegetable kingdom* is naturally secured by *subdivision* and *reproduction*; the former constitutes the simplest and that which is most closely connected with the function of nutrition. It may be manifested in many ways, as in the seperation of the whole structure into portions which takes place in such articulated Algæ as the Diatoma. The formation of gemmæ or buds by the Marcantia Mosses, which drop off when mature, and continue the race, or remain attached to the parent. The evolution of buds in the flowering plants, which may or may not continue as part of the individual structure, as also artificially by cuttings, slips, buds grafting, &c. But plants, at least all those that bear flowers, also secure the continuation of their species, by a distinct process of a very different nature. But for the better illustration of reproduction in the vegetable kingdom, if we adopt the Linnæan Primary division into Phanerogamia and Cryptogamia it will simplify it very much, and though there may be some connecting links between the two grand divisions, in which it may not be applicable, still, as a general rule, we may say there is this essential difference between the flowering plants and flowerless plants;—that the former require two sets of organs, *a germ preparing and a germ nourishing;* whereas, in the latter the cell germs are contained in what is termed the *spore*, and when liberated from the parent they are developed into cells, without any further assistance than that which they derive from the air, moisture, &c., which surround them. The Protococcus nivalis (red snow) affords us an example of the simplest form of the special function of reproduction; *each vesicle* of this simple plant *contains a number of little minute granules*, which may be seen to increase within the parent cell, and at last to rupture their envelope and escape from its cavity; in their turn these develope themselves into new cells, which are burst by the embryos within them, at the same time destroying its individuality. A similar process takes place in the highest plants, with this difference, that as the whole system is not engaged in the formation of the embryo, but only a very small portion of it, that portion alone ceases to exist as soon as its functions are performed; the life of the animal remaining uninjured. A little farther on among the Confervoid tribes, we find the granules are first seen on the internal walls of the fertile cell as unformed green dots, which gradually assume a more definite aspect, and at last separate themselves from their attachment, and move freely within the cell; after a period of continued restlessness, one part of the containing cell is observed slightly to protrude, and in a short period to open in such a manner as to permit the exit of the granules. In the more complex organisms of the Algæ (or sea-weed), as in the Fucus vesiculosus (bladder *wrack*) there is a greater specialisation in the reproductive system. In this class the reproductive cells are developed in particular situations, as on the general surface of the frond, or on separate leaflets, or enclosed in distinct cells or receptacles. The first indication of a *theca*, and their separation does not interfere with the nutritive function of the plant. Through the Lichens and Fungi we pass by almost imperceptible gradations to the most complex—the common Mushroom. In the *hymenium*, or fructifying membrane in this plant, are found certain elongated tubes, lying side by side, which have received the name of *asci*, and these contain the fertile cells, or spores which enclose the granules, or real germs. Passing from these to the Mosses, we find the spore cases, or theca (as they are termed in the higher cryptogamia) more completely separated from the rest of the system. In these plants, the theca, or urn, containing the spores, is closed by an *operculum*, or lid. The mouth of the urn, when the operculum is taken off, is found to be surrounded by a delicate fringe, termed the *peristome*; in the centre of the theca is the *columella*, around this are clustered the spores. In some of the plants, as well as in the Lichens, we find *propagation* also carried on through the means of little bodies analagous to *buds*, or *gemmae*, which separate from the parent plant, and are capable of maintaining an independent existence, throwing out roots when they drop upon the ground. From the Mosses we ascend to the Ferns, which seem most nearly allied to the flowering plants. In these the spores, commonly supposed to be the equivalents of the seeds of Phanerogamia, are contained in little cases of very peculiar structure, termed theca, which are developed on some part of the under surface of the leaf, being always connected with its veins; each theca, in its most perfect form, is mounted on a little stalk, which is continued round its circumference in the form of a ring, and this, by its elasticity, separates the divisions for the escape of the spores when ripe. In the Marsillaceæ, which are grouped with the ferns, we have the first appearance of any organ superadded to those designed for the evolution of the spore; this consists of what is termed an *ovule*, which is a receptacle adapted to receive the *germ*, and to forward its development by means of the store of nutriment it contains. In the Marselia, the theca containing the spores (analagous to the Anthers of flowering plants) are enclosed with the ovules, in a common envelope; and the communication between them seems to be direct.—The spores will not of themselves produce new plants, neither will the ovules, since the germs contained in the former require to be assisted in their development, and the latter must be fertilised by the introduction of the germ; this process here seems a very simple one, being effected by the direct communication which exists between the two organs. These lead us to the higher plants, in which the same purpose is effected but in a different manner. *In the Phanerogamia* or flowering plants, we have seen that *two distinct organs are present*, the germ preparing and the germ nourishing; the former is termed *anther*, in these organs are contained the pollen grains (see preparation A. 9) which are analogous to the reproductive granules liberated from the cells of the algæ. When these pollen grains fall on the *Stigma* or first portion of the germ nourishing organ they become attached to it, by means of a gelatinous exudation with which it is covered. After a time the outer of the two membranes or envelopes separates (as we have seen them in the spore) in one or two points; and the inner tunic is protruded in the form of tubes down the soft loose tissues of the *style* and reach the ovarium. In these tubes are contained some of the granules that might have been previously seen freely moving within their cell; these enter the ovules, in whose cavities nothing but a quantity of fecula and mucilagenous fluid previously existed. The germ there continues to increase until it finally either occupies the whole ovulum, or shares it with the separate albumen. The maturity of the seed is a period of cessation in its actions, and it remains dormant till the stimuli requisite for its further evolution be required. The two grand divisions differ, not only in the Phanerogamia, having two sets of reproductive organs and the cryptogamia one, but also in the structure of the *seed* of the former as compared with the *spore* of the latter. The spores after being liberated from the parent are developed into cells without any further assistance; whereas a mature seed in the former contains not only the embryo of the future plant, exhibiting the rudiments of its future stem and roots, but also cotyledons which assist in its development (acting as temporary respiratory organs) and also a store of nutriment always assimulated by the parent, which, like the albumen of the egg, supports the growing structure until it is capable of maintaining its own existence. This part generally constitutes the bulk of the seed.

B. 93.—*The process of reproduction in the animal kingdom* is in so may points like what takes place in the vegetable, that it almost baffles any attempt to point out the precise distinction between the two; among the higher tribes the difficulty is not great, but as we descend in the scale of each we find them so similar, that it must be confessed the line of demarcation cannot be easily (if at all) drawn. The separation of parts of the parent structure into new individuals, whether it be naturally or artificially effected, either in animals or plants seems to constitute the simplest form of reproduction, and that which is connected most closely with the nutritive function; and although it is only in the lowest class of animals that the reproductive process, in this manner, is manifested as apparently as in plants, it still may be traced without difficulty in the highest. In the *Hydra* and many other polyps, the power of reproduction is such, that the smallest section will become a perfectly separate animal; the Crustaceans can reproduce their claws and the Salamander perfect bones, nerves, muscles, &c., if a limb be taken off, Fishes can reproduce their fins; and in mammalians we find there is a capability in tissues to regenerate similar of their own kind, and to re-form an entire bone when the original one has been destroyed by disease. But this mode of reproduction or propagation, by mere extension of some part of the original structure, is only confined to plants and the lower animals that are so closely connected with them; for the higher we ascend in the scale, the more completely specialised becomes the reproductive process, and its relation with the nutritive system is much less obvious. In many of the polyps we observe this mode of *gemmiparous propagation*, for the new being is obviously nothing but an increased development of a part of the parent structure, and exactly corresponds with the bud of a plant; a similar mode of increase seems to exist in some of the simpler entozoa, in the present preparation, Hydatids from the peritoneum and also in preparation F. 346. The *fissiparous generation* is but another form of the same plan, the parent structure not putting out a smaller or younger bud, but dividing itself into parts of which each has the power of reproducing the whole; this spontaneous division we meet with in the Naidæ, &c. The first distinction in the character of the *reproductive bodies liberated* from the parent corresponds with that pointed out in the vegetable kingdom, (B. 92) for we find in the sponges H— gemmules, probably analogous to the granules emitted by the algæ, which are formed by one set of organs only. But in the higher class of animals, an ovarium or egg, is produced like the seed of the phanerogamia, by the concurrence of two sets of organs, which are sometimes united in the same individual (as in the mollusca and radiata), but are more commonly separated. This ovum is by some animals cast off early, having, like the seed in plants, a store of provision laid up with them; in other animals the ova are retained till the young are hatched or come forth alive, the animal is then said to be *ovo viviparous*; in the true *viviparous* animals, as the mammalia, there is but a very small store laid up, as its existence is to be continued by a peculiar attachment to its parent. In the higher class of animals, as in the flowering plants, we see that the mysterious process of reproduction evidently consists of nothing else than the implantation of a cell germ, prepared by the *male* organs, in a nidus or receptacle, adapted to aid its early development;

which nidus constitutes the essential part of the *female* system. The *germ preparing* and *germ nourishing* organs differ much in form and complexity of structure in the various tribes of animals, but their essential function is the same in all. The present specimen consists of Hydatids taken from the peritoneum. These simple *animals propagate by internal gemmules* which grow from the membraneous walls of the sac, and which having attained a certain growth become detached, and are found floating in the glary fluid contained in the interior of the parent.

Presented by Mr. G. Elkington.

B. 94.—*In the Polypifera, reproduction,* or multiplication, takes place in three different ways, (see also preparation, A. 86) —by *division,* by *offshoots,* or the formation of new branches bearing polyps, and by *gemmules, capable of locomotion.* The two first seem more like the growth of a plant than the development of an animal. The third, or that by reproductive gemmules, seems to be specially adapted to diffusion of the species. In the tubular polyps, at certain periods of the year, besides the ordinary cells which contain nutritive polyps, others are developed from different parts of the stem, which may be called female, or fertile polyps ; although simply termed the vesicles, they are produced in the same manner as the rest of the stem, by an extension of the tegumentary membrane ; they are, moreover, deciduous, falling off after the fulfilment of their office. The reproductive germs are seen to spring from the inner layer to which they are attached by pedicles ; regarded by Authors as fulfilling the office of umbilical cords, during their early growth. On tearing open one of the capsules, when the including germs are ripe, the latter are seen to be round grains, of a gelatinous appearance, covered with minute celiæ, which, like those of the gemmules of the sponge, (see plate H.) enable them to swim about at pleasure, in search of a proper locality whereon to fix a permanent habitation. " When fixed, each gemmule becomes flat and circular, and assumes a radiated appearance, resembling a minute grey star, having the interstices between the rays filled with a colourless transparent matter, which seems to harden into horn. The grey matter swells in the centre, where the rays meet, and rises perpendicularly upwards, surrounded by the transparent horny substance, so as to form the trunk of the new zoophyte."—See Grant, Jones, Müller's Archives. 1826.

B. 95.—The ovigerous system in the Melolontha. In the female Cockchafer, the ovaries are long tubes, forming two distinct fassiculi symmetrically situated on the two sides of the body (see plate H.); at their commencement the ovigerous tubes are slender, and the ova which they contain at this point are in a very rudimentary state of development; they generally dilate, however, and as they expand, the ova are seen to attain larger dimensions. Near its termination, each ovarian tube assumes a grandulated texture, and they all ultimately open into the corresponding excretory canal. Taking the higher animals (see preparation B. 101) as a standard of comparison, we may suppose the formation of the eggs in these tubes to be accomplished in the following manner—" in the upper part of the tube is formed the yolk, enclosed in its peculiar membrane, and provided with that wonderful germ, from which, after impregnation, the future being is to be developed. As the yolk slowly descends to the more dilated part of the canal, it becomes clothed with the albumen, which constitutes the white of the egg, and ultimately, before the nidus of it is formed, receives from the grandular termination of the ovary its last integument, or shell; thus completed, it passes into the excretory canal, and thus meeting, the corresponding tube, derived from the ovaries of the opposite side, joins it, to form the common oviduct through which the egg is conducted out of the body. But, connected with this common oviduct, are the *gluters secretors* (see preparation A. 78) for investing the egg with an adhesive varnish, to glue it in situations favourable to the development of the ova; and the *spermatheca*, which is a receptacle provided to receive the seminal secretion of the male during copulation. John Hunter has proved that it contains the fructifying sperm (seminal animalculæ) of the male, and even succeeded in fæcundating the eggs of an unimpregnated female. *Home's Lecture on Comp. Anat.*

B. 96.—A beautiful specimen of the ova of the Welk, or Buccinum (one of the Siphoniferous Gasteropoda). These ova are enclosed in tough tenacious capsules, secreted by a glandular organ in the vicinity of the oviduct, (see preparation, A. 75) which open by a valve something similar to that which contains the egg of the Shark and Ray tribe; when first passed, their extreme tenacity glues these cells, or chambers, together, and also to the surface of rocks, sea-weed, and even to the shells of other mollusca. These capsules contain several eggs each. The development of the ova, in the gasteropoda, reveals facts of much interest. When they are first laid, the ova are seen to contain a large quantity of albumen, surrounding a very small vitelline sac full of granules; the germinal vesicle, however, may be distinguished; the latter soon disappears, and the surface of the vitellus is then seen to be covered with facets, which are probably the cells of the germinal membrane; a translucent spot soon manifests itself on the surface, which gradually changes into the resemblance of the cicatricula of the bird's egg. In the interior of the vitelline sac, a mass of globular cells is then developed; these multiply by the formation of other cells within them, and in this mass the liver originates; this organ being the most important, is developed first in this class; at the same time, the cicatricula is also extending and exhibiting an obvious cellular organization; from the latter, the head and foot, the chief organs of animal life, are subsequently developed. The external layer of the germinal membrane becomes the mantle, and, from its exterior, produces the shell, which may be in one or two pieces, according to the class. Many of the Gasteropoda, destitute of shell in the adult state, all form one in the shell. Ann. des Sci. Nat. Tom. xiii. p. 129, et seq. The embryo is at first supplied with nutriment directly by the yolk, and this gradually absorbs the surrounding albumen, in proportion as its own materials are exhausted, so that the vitelline sac, which was at first so small, is gradually distended, so as nearly to fill the egg. The embryonic mass in this class continually revolves on its axis, during a large portion of its period of development, and may be regarded as the remnant of that power of locomotion, in the imperfect condition of the embryo, which is so remarkable in the polyps and tunicata, and also in the sponge (see H. —.). The eggs of the terrestrial gasteropoda are very numerous, and can bear intense cold, and resist a temperature of above 40° ; in fact, there is a peculiar tenacity of vitality which they exhibit under circumstances which would be thought sufficient to destroy the young before they are hatched.

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B. 97.—A female Lobster. In this class of animals (the Crustacea) the eggs are almost invariably carried about by the female until they are hatched, and are fastened by a stringy secretion to the false feet under the abdomen; and the female can be distinguished from the male of the same species by the greater proportionate size of this part of the body. This situation, also, is evidently adopted to ensure the exposure of the ova to the influence of the surrounding element, and thus to provide for the respiration of the embryo. In many of the crustacea there are other appendages to which the eggs adhere; in the Asellus the male carries the female about with him during the breeding season, after which her eggs are found impregnated and enclosed in a membraneous sac placed under the thorax; the Entomastraca are similarly provided with saculi attached to the hind part of the body. The ovaria occupy a position analogous to that of the male testis, and are found in the dorsal region of the thorax, lying up on the posterior part of the stomach, and a simple canal, derived from each side, conducts the eggs to the external apertures found upon the first joint of the first pair of legs. (Bristles have been passed into their orifices). It is not known in what manner these animals become impregnated, as there is no intromittent apparatus visible. But Milne Edwards thinks that the extremity of the excretory duct undergoes a kind of tumefaction, and may be protruded externally, and so direct the course of the fœcundating fluid.

B. 98.—Portion of the ovigerous system in the Salmon.—See preparation A. 72 in Appendix.

B. 99.—A dried specimen of the outer envelope of the egg, laid by the shark, one of the Chondroptorygian fishes. This horny shell, in which the yolk and white of the egg become encased, is secreted by a thick glandular mass, about the middle of the oviduct of the female (see preparation A.), the four corners, in the recent state,are lengthened out into long tendril-like cords (similar to those of the sweet pea), designed to entangle it among the sea-weed at the bottom of the ocean, there to be rocked till the young is matured by the vivifying effects of the ocean. This cradle is very tough and leather-like, lest the dashing of the waters should break it; and it has been so constituted and designed by nature's great Architect, as to remain permanently open at one extremity, so that the slightest pressure from within, of the feeble embryo, may separate the valvular opening, and so release from his cradle bed the young savage of the deep.

B. 100.—In this jar are placed specimens of eggs belonging to the Chameleon and Serpent; and also the ovigerous system of the Lizard. The chameleon's eggs are in distinct compartments, surrounded by peritoneum : and the shells are composed of a thin coriaceous substance, of an oval shape. The egg-shells of the serpent are similar.

B. 101.—This is a beautiful specimen of the female generative system, in the feathered tribe, when it is under the influence of impregnation. In this preparation the ovary assumes a racemose appearance and consists of pedunculated ovisacs of all sizes, each of which is found to consist of two membranes; the exterior is very vascular and surrounded by a pale zone; but the inner membrane is thin, pellucid, and supposed to be glandular; within these two membranes are contained the basis of the future ovum, one of these in a matured state has burst through its envelopes and passed into the oviduct, there to be enclosed in the other parts, entering into the composition of the egg; these are the albumen, chalazæ membrana putaminis, and the calcareous shell. The oviduct, which is analogous to the fallopian tubes in animals, commences very wide and funnel shaped (and here has a bristle passed into it), its lining membrane, at this extremity, is thin and smooth, lower down it is thick and more corrugated (like preparation 59), here the albumen is laid on layer by layer, gradually coating the membrana vitelli; and also here is formed the chalazæ by the revolutions of the yolk as it is pushed forward into the oviduct, these retain the yoke in situ, so that the germ is always near the warm breast of the female or male (See Diagram H. 11), lower down the whole is incased in a dense membrane,—the membrana putaminis; and lastly, the terminating portion of the canal which is more dilated than the rest, (the present specimen has an egg in it) secretes the shell, which is formed by the gradual accumulation of extremely minute polygonal calcareous particles, so disposed on the surface of the egg that imperceptible interstices are left between them for the purpose of transpiration. See diagram H. A. 20.

B. 102.—The uro-genital organs of a female Hare in the gravid state; two of the young leverets have been removed, and also the cornu which contained them, the other fœtus remains in its cornu; the ovary and tube also are attached. The vagina has been laid open to show the two separate ora uteri, bristles are introduced into them, and also into the bladder, the external orifice of which opens into the vagina very high up, and its orifice is surrounded by a kind of semi-lunar fold, or constriction, like that in the cloaca of some birds; a portion of the rectum and external organs are also appended. The reproductive organs in some of this class of rodent animals affords a good example of the lowest form of a placental uterine system; and, we may say, rank next lowest in the grade of viviparous animals to the Ornithorincus Paradoxicus and Marsupial animals, whose generative system holds the link between the oviparous and viviparous classes. The ovaria in some of these animals retain the racemose appearance of those of the ovipara. The uteri are also two distinct tubes throughout their whole length, and open by separate mouths into the vagina, so far the anatomical characters follow the same type; and although the vagina is not a distinct cloacal cavity, like that into which the terminal openings of the ovipara discharge themselves, still, from the bladder opening into the vagina so high up in these animals, and the rectum terminating so near the vulva, we may say, that it is but little removed from the condition of a cloacal chamber. This double state has been met with in women, and in the very early stages of fœtal life there is a partial approximation to it. Superfœtation is supposed to occur oftener in these animals than any other, and this condition of the uterus is supposed to exist when superfœtation takes place in woman.

B. 103.—Impregnated cornu of the uterus of a Hare, beautifully injected. The uterine orifices are very apparent where the placenta adhered (see preparation C. 171), which was injected from or through them; it also shows the projecting state of the corpora lutea, which are beautifully injected. *Mr. F. Elkington.*

B. 104.—Gravid uterus of the Mouse. One cornu has been opened ; two young mice are seen suspended by their cords from their respective placentæ, which, in this species, is in the form of a simple cup. The other two embryos have been removed, and the pedunculated surface of the uterus, to which they were appended, is seen.

B. 105.—A small portion of the uterus of a Cat, with the placenta still attached, and injected from the uterine vessels.

B. 106.—A section of the impregnated cornu of the gravid uterus of the Sheep, beautifully exhibiting the caruncles, or uterine fungi, from the interstices of which the villi of the vessels of the fœtus (which is appended) are partially withdrawn. A section of the ovary has been made, to show the corpus luteum, and tassels of silk have been passed into the free end of the fallopian tube, and also where it opens into the cornu of the uterus.

B. 107.—A beautiful specimen of the cervix and os uteri of a Cow, which was in calf. The whole canal is plugged up with a tenacious, tough, gelatinous substance, secreted by the glands of these parts.

B. 108.—The unimpregnated cornu of the uterus of a Cow, ten weeks in calf. This portion is not nearly so vascular as that which contained the fœtus (see next preparation); for, though a portion of the membranes extend along the common cervix, from one body to the other, still the fœtus is developed in the cornu belonging to the ovary, from whence the germ is produced. If two ova be present, they are separated from each other, each being contained in its own distinct body, or cornu.

B. 109.—This specimen of the impregnated cornu of the gravid uterus of a cow, was taken from the same animal as the preceding preparation. The numerous large uterine fungi or caruncles are beautifuly injected, these generally constitute the maternal portion of the placenta in the ruminantia; no decidua being found in this class, they are always permanently attached (see preparation A. 42), but under the influence of impregnation become more vascular, &c., into these the absorbing radicles or villi are implanted (see next preparation); these cotyledons contain a white fluid, which resembles chyle, and upon being pressed in the recent state it exudes in considerable quantity; this is presumed to be for the nourishment of the fœtus in the first months of its existence. (B. 118) The fimbriated extremity of the fallopian tube has a loop of crimson silk passed into it, and the ovary has been laid open to exhibit the corpus luteum, which appears a round body of a lobular appearance with white lines radiating (see preparation A. 58) to the circumference; it is of a very distinct nature from the surrounding tissue, and in William Hunter's own words—"of a yellowish cast, very vascular, tender, and friable, like glandular flesh." The ovary previous to being opened presented on its surface a round body, projecting considerably from its surface in the middle, on which was a little irregular indentation, being the opening through which the ovum was discharged from the graafian vessicle.

B. 10.—A single uterine caruncle from the uterus of a cow, this shows most beautifully the mode of the placental and uterine attach ment in the ruminantia, the absorbing fibrilli or radicles of the chorion, which are injected (from the funis) blue, are seen implanted into the uterine caruncle, which has been injected red from the uterine vessels.

B. 111.—One Cornu of the gravid uterus of the Sow, minutely injected, (this contained preparations C. 166, 167) it is laid open to exhibit its internal structure, which was in a very high state of vascularity, aud exhibited a great number of little red round spots, into which the extremities of the umbilical vessels were implanted, which in the recent preparation appeared white, as seen in No. 166. *Mr. F. Elkington.*

B. 112.—The cervix and os uteri in the Mare. The glandulæ Nabothi, or the mucous glands, which secrete the gelatinous plug filling up the neck, are well seen.

B. 113.—The gravid uterus of an Ass, pregnant six weeks. One cornu has been removed, as also the os tincæ; the other cornu has been laid open, and shows the young embryo enveloped in its membranes, on the surface of which the vessels are seen; a loop of crimson silk has been put into the entrance of the fallopian tube. A section has been made of the ovary, in which the corpus luteum is quite apparent.

B. 114.—Gravid uterus and appendages of the Ass, in the early months of pregnancy. This specimen is beautifully injected, and shows, on its internal surface, the numerous little Lacunæ, or Cotyledons, which receive the vascular papillæ of the Chorion. Standing out amongst the lacunæ are seen the capilliary terminations of the uterine arteries, by which is sent the supply of fluids necessary for the development of the embryo. These lacunæ are very numerous, and the corresponding terminations of the chorion, which are inserted into them, constitute the form of the placenta, peculiar to this and some other animals. In this preparation, the corpus luteum contained in the left ovary, is beautifully seen (bearing all the peculiarities of that enumerated in preparation A. 109.) A section has been made into the posterior part of the vagina, and the puckered os is well seen. This is a good specimen of the *Uterus Bifundalis*, and is a grade nearer than the ruminantia to the simple uterus of Woman. The cornu seems to be partially shut by a kind of sphincter; the common cavity is here the receptacle of the ovum; but a portion of the membranes extend into the cornu. *Mr. F. Elkington.*

B. 115.—The uterus and appendages of a Woman, a few months after delivery; it has become hard, firm, and compact, like the virgin uterus, and offers a good contrast to the succeeding preparations; but in this case, a relaxed state of the vagina remains. There are also many adhesive bands, the result of inflammation.

B. 116.—The uterus of a Woman, a short time after delivery. A section has been made into the posterior wall, to show its very great thickness. The glandulæ nabothi, in the neck of the uterus, and at the os, which, during pregnancy, secrete the gelatinous plug (so well seen in preparations 107—112), and also during labour, secrete that discharge which lubricates these parts, are well seen. There is the remains of a corpus luteum in the left ovary, bearing all the characteristics peculiar to it at that time, described by Dr. Montgomery, in his "Exposition of the Signs and Symptoms of Pregnancy."

B. 117.—This is a most beautiful specimen of Uterine Decidua; it has become very thin, and exhibits a great number of foraminæ, giving it the lace-like appearance from which it has been called—*Membrana Crebrosa*, by Osiander. The decidua reflexa covers part of the ovum; but at the part where the rudimentary placenta is, the capilliary terminations of the fœtal vessels are distinctly seen, covered in by another layer—the Decidua Serotina, through which none of them pass. A portion of the chorion has been cut through, and the fœtus, with the vesicula umbilicalis still attached; and the amnion (which is small in comparison to the chorion) at this period, lie at the bottom of the cavity. *Mr. Francis Elkington.*

B. 118.—This preparation has been placed under the section allotted to the uterus in its pregnant state, as the *Decidua*, properly speaking, is a product of the uterus, being, according to the latest researches, composed of the inner portion of the mucous membrane itself, which undergoes a considerable change in character; the uterine decidua occurs also in cases of extra-uterine fœtation, when the embryo is not contained in its cavity. In this jar we see a most beautiful specimen of the decidua, vera, and reflexa; the latter contained the fœtus (in jar A. 19). *The placental portion of the cord* and remains of the umbilical vessicle (its first source of nutriment) are still visible; the duplicature of the outward layer to form the reflexa is beautifully and most distinctly seen. The external or uterine surface in this preparation most clearly shows the little decidual cotyledons of Professor Montgomery, of Dublin,—on the subject he says "these have the appearance of little bags, the bottoms of which are attached to or imbedded in its surface, they then expand or belly out a little, and again grow smaller towards their uterine end, which in far the greater number of them is an open mouth, when separated from the uterus; how it may be while they are adherent I cannot at present say, some of them which I have found more deeply imbedded in the decidua were completely closed sacs; they are best seen about the second or third month, and are not to be found at the advanced periods of gestation." He thinks also that they deserve their name not only from their form, situation, &c., but also from having "on more than one occasion observed within their cavity a milky or chylous fluid;" (see preparation 109) "and he is disposed to consider them as reservoirs for nutriment fluids, separated from the maternal blood, to be thence absorbed for the support and development of the ovum; this view seems strengthened, when we consider that at the early period of gestation, the ovum derives its support by imbibition, through the connection existing between the decidua and the villous processes covering the outer surface of the chorion." *The decidua reflexa*, according to Hunter, is formed by the ovum, on passing from the fallopian tube into the uterus, pushing before it a portion of the decidua vera;

and that this portion is gradually extended by the subsequent growth of the ovum, so that at last it is surrounded completely. Others say, that it is a new product, and has no connection with the decidua, more than to receive its vessels from it, and that this new product is destitute of the small orifices that characterise the vera, except on a small zone surrounding the angle of reflexion, that is, the part next the decidua vera. As the ovum increases in size, the decidua reflexa which covers it, comes in contact with the decidua vera which lines the uterus, and the fluid which previously filled the cavity disappears by absorption; this usually happens during the third month, after this period (or even earlier) it is difficult and frequently impossible to distinguish between the two layers. At one part of its surface the ovum is covered by neither the decidua vera nor by the decidua reflexa, this is where the former originally was detached from the walls of the uterus by the ovum, and where it becomes continuous with the latter; it is at this point the placenta is subsequently formed, the deficiency is supplied however by a new product, very analogous in structure to the decidua reflexa, and continuous with the decidua vera; this is termed from its formation being supposed to take place at a later period, decidua serotina. *Mr. Francis Elkington.*

B. 119.—Human placenta to exhibit the *placental decidua* or *decidua serotina*; which latter term it has received from its formation being supposed, by Lobstein and others, to take place at a later period than the other decidual membranes of which it is supposed to be a continuity, however, Wrisberg says, it is a distinct formation and can be divided into two separate membranes (154); on the surface of this placenta are (and when recent were beautifully seen) vessels as large as bell-wire, they in form resemble the corkscrew or curling arteries of the uterus (see preparation G. 461) and their coats resemble the decidua itself in softness and texture, they appear to come from the uterus, or rather are continuation of the uterine vessels, and open into the placenta, or it will give a more correct idea to say that they open at once into cells which they fill even to the fœtal surface. Arteries and veins have been found in the uterine decidua also.

This is a very valuable preparation, particularly referring to what has been said in No. 157, C. *Presented by Mr. Mackay.*

B. 120.—This jar contains an inverted section of the human uterus. It well exhibits on its cut surface the zig-zag course of the uterine vessels, and also where the decidual surface has been removed,—how large and how near those sinuses are to the internal surface of the uterine cavity. See preparation G. 410.

B. 121.—A lateral section through the fundus, neck, and os uteri, from the right side of the Human Gravid Uterus, sometime after labour. Its parieties have greatly diminished in size ; and it was losing that peculiar spongy structure of pregnancy. The difference which exists in the structure and disposition of the vessels of the fundus, and about the neck and os uteri, are well seen.

B. 122.—Upper and left lateral portion of a Human Gravid Uterus, exhibiting a section of some of the large vessels which supply this organ ; and also the round ligament and appendages ; the round ligament is seen arising from the side of the uterus, close beneath and a little anterior to the uterine extremity of the fallopian tube ; besides its investing peritoneal coat, cellular tissue, and blood-vessels, distinct bundles of muscular fibres are beautifully seen. According to Bell, " these fibres ascend, and regularly diverging, spread over the fundus until they unite, and form the outermost stratum of the muscular substance of the uterus." (See Madame Boivin, plate H.B. —). The round ligaments have been considered by some as ordained to direct the ascent of the uterus during gestation ; by others (as Bell), only as ligaments. In the early stage of embryonic life, when the uterus resembles some of the lower types, and the ovaries are situated like the testicles in the male, up in the abdomen, (see preparation A. 21), they may act as gubernaculi ovarii. The fallopian tube has been opened, and a bristle passed through its uterine end. The outer peritoneal, the middle muscular and internal mucous layers, are well seen ; its free and fimbriated extremity is glued to the ovary ; this state has been considered as a cause of extra-uterine pregnancy and barrenness. The whole canal is abnormally dilated and partially dropsical.

B. 123.—This section of the Human Gravid Uterus has been inverted, and some of its decidual surface removed, to exhibit its muscular structure. Around the orifice of the fallopian tube the fibres are seen running in concentric circles, which, according to Bell, " meet at their circumference, unite, and mingle, in making an intricate tissue," which "structure of the inner surface of the fundus of the uterus is still adapted to the explanation of Ruysch, which was, that they produce contraction, and corrugation of the surface of the uterus, which, the placenta not partaking of, the cohesion of the surface is necessarily broken."

B. 124.—The Uterus of a Woman, a short time *after delivery*. A section has been made, to show its inner surface; the walls of this organ have been put on the stretch, to exhibit its muscular structure, which is of a paler colour, and its fibres flatter than those of voluntary muscles, and remarkably interwoven with each other. Bell says " they run with an appearance of irregularity among the larger vessels, but they are well calculated to constringe the vessels, when they are excited to contraction; and this intimate interweaving of the fibres with each other greatly increases the extent of the power in diminishing the cavity of the uterus."

B. 125.—Portions of injected Uterus to exhibit muscular structure, &c.

B. 126.—A *five months* Fœtus in utero. The patient died of puerperal convulsions, she had been pregnant once before and had convulsions during her labour. In this preparation is beautifully seen the glandulæ Nabothi around the orifice of the patulent os uteri. *Presented by Mr. Simons.*

B. 127.—The Gravid Uterus of the human female in the *sixth month* of pregnancy, it has been finely injected, and also the placenta which is still attached to the fœtus. In this preparation the membranes are seen covering the os uteri, which, in this state of pregnancy is locked up by a viscid mucous (see preparation B. 107). The right ovary presents on its anterior aspect the corpus luteum, which is a round body projecting considerably from its surface, on which the vessels are seen most beautifully to meander. It is at this point the ovum was discharged from the graafian vessicle into the fallopian tube, which, with its fimbriæ are well seen.

B. 128.—*Human Gravid Uterus at the full time*, the cord was 36 inches in length, twice round the body and once round the neck of the child. The placenta was injected yellow, from the vein which returned with pressure by the arteries ; the vessels of the uterus were injected blue and red. A portion of the placenta was injected with yellow from the cord; blue and red from the uterus. See preparation C. 157. The amnion, the two coats of the chorion and the decidua are all seen, also the mode of adhesion.—See Hunter's plates.

B. 129.—Gravid Uterus of a human female, at the full time, showing the position of the child in utero. The placenta, floculent chorion and transparent amnion are well seen, also the os tincæ which is partially dilated, and the open mouths of the uterine sinuses on its cut surface.

Presented by Mr. G. Elkington.

B. 130.—This case contains three wax models of the lower part of the Gravid Uterus and vagina showing the different *appearances of the os tincæ* at the different stages *in the earlier months* of pregnancy, and also the membranes of the impregnated uterus.

B. 131.—Two sections of the lower part of the human Gravid Uterus, modeled in wax, to exhibit the *state of the os uteri* in the last stages of pregnancy, and also of the *presentation of the "bag of water."*

B. 132.—A case containing nine wax models of the Human Gravid Uterus, to illustrate the growth of the uterus, its position in the pelvis, and also the state of the os uteri, at different periods of pregnancy. Each model exhibits the fœtus and its membranes, its relative size and position, the placenta and the cavity of the pelvis, so as exhibit the relation this organ, in its impregnated state bears to them. These models fit into the following pelvic section:—

B. 133.—A wax section of the Pelvis, on revolving stand, belonging to the above.

B. 134.—A wax section of the Pelvis, into which the following twelve loose models fit:—

B. 135.—Presentation of Forehead, or anterior fontanel, showing the usual position of the head in its descent in this presentation.

B. 136.—Presentation of Head, which has passed through a partially developed and irritable os uteri. The os is tightly constricted around the neck of the infant, enclosing also a portion of prolapsed cord. This state produces strangulation of the infant, and prevents its further advance by the arrest at the shoulders.

B. 137.—Breech presentation: position of child prior to the rupture of membranes.

B. 138.—Breech presentation; the usual and most favourable position prior to descending after rupture of membranes.

B. 139.—Brecch presentation: the breech descending through the os uteri. The model is imperfect, as it does not sufficiently show the oblique position of the breech. The advance of the left buttock is partially exhibited.

B. 140.—Footling: the feet advanced into the passage, the buttocks resting on the pubis.

B. 141.—Knees presenting: the knees advancing into the passage (both usually the result of manipulation).

B. 142.—Breech presentation, face to front; the left leg brought down and protruding; the right leg lies across the brim, the heel resting on the pubis, so that it would be thrown upwards in the descent of the child; there is also a prolapsus of the funis round the leg. The right arm lies in an unfavourable position, ready to pass up above the head, during the descent especially, and thus increases the difficulty. This position, (unfavourable to the life of the infant), is generally produced by injudiciously drawing down the leg.

B. 143.—Breech presentation, with placenta previa.

B. 144.—An unusual and difficult cross Birth; chest and elbows presenting, with prolapsed funis, the feet high at the fundus, and difficult to reach; the bent position of the back would make the evolution of the child difficult and tedious.

B. 145.—Twins: first presenting by breech, with right elbow of second child—an anomolous presentation.

B. 146.—Wax model of the organs contained in the Female Pelvis, and also of their outlets, to show their relative connection with the Uterus and its appendages, which contains a three months' fœtus. A section of the model has been made, so as to exhibit the young fœtus enveloped in its membranes, which are represented here as being very vascular.

PART III.

C.

This section contains preparations which demonstrate the healthy and morbid Anatomy of the Placenta, Membranes, and Umbilical Cord of the Fœtus, in Man and other Animals. There are also a few specimens of disease or degenerated structure in the fœtus, contracted in utero, which caused death, either during its intra-uterine existence, or sometime after its birth.

At the earliest period, the human ovum and that of the mammalia, bear a perfect analogy to the eggs of Fishes, Amphibia, and Birds. This egg, or ovum, in the *oviporous* animals, after a short period, is cast off by the parent, being previously supplied with a store of nutriment sufficient for it, till it is able to provide for itself, either as a perfect being in all parts like its parent, or as an animal in transitu to its perfection. Among the *ovo-viviparous* animals are many Cartilaginous and a few Osseous Fish, several Batrachia, Sauria, Ophidia, and also some Gasteropodous Mollusca, Insects Annelida and Entozoa. In this group of animals, the egg, or ovum, is retained within the body, and is cast off alive. However, the female generative organs, and the eggs they produce, resemble much more strongly in structure, that of oviparous than those of viviparous animals ; and there is not that intimate connection of structure, nor interchange of substance between the mother and the fœtus, which occurs in mammalia. This form of generation is also liable to vary, and occasionally to run into the truly oviporous kind, some animals having live young at one season of the year, and laying eggs at another, and the Lacerta Agilis retains the ova for *a part only of the time* employed for its development, the process of hatching being completed, as in the bird, *without.* In the truly *viviparous* animals, or mammalia, generally speaking, there is an intimate organic connection between the fœtus and mother, by means of which, the former is supplied with the materials of its growth in utero ; and also there is provision provided for the young after its birth, through means of the mammary gland, which provision, though perhaps it is not absolutely essential in the higher order of mammalia, seems from recent researches to be essentially so in the lower (as in some of the Marsupial, see Professor Owen's work). But as we descend in the series of mammalia, we find a nearer and nearer approach, not only in the general structure of the body, but also in the conformation of the generative organs to the oviparous type, until, in the Monotrematous class (Ornithoryncus Ehidna) investigators are, as yet, unable to say whether it is oviparous, ovo-viviparous, or viviparous. *Mammalia are therefore divided into Placental and Non-Placental animals ;* this latter class, to which belong the Monotremata and Marsupial, produce their young at a very early age, when they are conveyed into the marsupium, to be there applied to the nipple, until their full development takes place. But precisely at this point of development, when the marsupial embryo is expelled from the uterus of its parent, namely, when the functions both of the vitellicle and of the allantoic apparatus become no longer efficient either for nutrition or respiration, a third system of organs is developed in the placental mammifera, whereby a vascular communication is established between the fœtus and uterine vessels of the mother, forming what has been named by human

Embryologists, *Placenta*. The intimacy of this union varies much in different tribes of animals; it is greatest in the placenta of the human female, and from this may be traced a series of animals in which it becomes more and more loose.

The following is from Sir E. Home's Classification of Placental Animals.

Order I.—Placenta lobulated on the Uterine surface, only—
Woman.

II.—Placenta divided into two portions—
Monkey tribe.

III.—Placenta, surrounding the Embryo as with a belt—
.. Belt broad, Lion.
.. Belt narrow, Dog.

IV.—Placenta, completely divided into lobes—
Hare, &c.

V.—Placenta in the form of a—
.. Simple Cup, Porcupine.
.. Cup smooth, Mole.
.. Pedunculated, Bat.
.. Pediculated, Guinea Pig.

VI.—Placenta, many in form of cups, Terminal with lateral Branch, Cow.
.. Filleform, Deer.
.. Villous, Sheep.
.. in tufts, Goat.

VII.—Projecting Plexus, two species— Thick, Mare.
.. Thin, Ass.
.. Structure Stellated, Hog.
Minutely Vascular, Camel.
.. Tufted, Whale.

Sir Everard Home, in talking of the Placenta, says that "the different structure of the placenta may throw some light on the reason why animals of different genera cannot breed together." He also says that there are nerves developed in the placenta, and that "in the cord the nerves are in the angle between the vessels, so as to secure them from the possibility of pressure."—And he suggests, that the nerves may be the channels which communicate to the fœtus those emotions of the mother's mind, which we know, when *long* continued, influence the development of the fœtus. See Sir E. Home's works, also Dr. Montgomery's "Signs of Pregnancy," on this subject.

C. 147.—Wax model of a fœtus at the ninth month; it is represented as still attached to the placenta by the umbilical cord. The abdomen and thorax have been laid open in order to show the course of the fœtal circulation, which is as follows; from the substance of the placenta arise the first branches of the *umbilical vein, which is coloured blue*; these join into one vessel which passes along the umbilical cord, through the abdomen of the fœtus, to the horizontal fissure of the liver, sending branches to either side, particularly to the left lobe, which at this period of life is of considerable size; when the umbilical vein arrives near the transverse fissure, it divides into two branches, the right or communicating; the left or ductus venosus. The right is the larger, it passes transversely for about an inch, and joins the trunk of the vena portæ. The left or ductus venosus, ascends towards the diaphragm and joins the middle hepatic veins, just as they are about to join the vena cava. The right auricle distended with blood from the superior and inferior vena cava, then contracts and propels its contents partly into the right ventricle, but principally through the foramen ovale into the left auricle from the right ventricle the blood is propelled into the pulmonary artery. This vessel in the fœtus (see preparation D. 262) divides into three branches, one for either lung, small; and one in the centre, very large, the *ductus arteriosus*; This is about half-an-inch in length, passing backwards and downwards, and joins the aorta a little below its arch; but little blood passes through the lateral branches, the principal portion passing through the ductus arteriosus into the aorta. That portion of the blood which was transmitted directly from the right auricle through the foramen ovale into the left auricle, descends into the left ventricle, from which it is also propelled into the aorta, the superior branches of which circulate the blood through the upper parts of the body, whence it is returned to the heart by the veins that form the superior vena cava; the descending aorta conveys the blood to the abdominal viscera, and at the fourth lumbar vertebra, this vessel divides into the external and internal iliac arteries; the former are small in the child; the latter are very large, and are named the umbilical or hypogastric arteries, these pass upwards and forwards along the sides of the bladder and ascend to the umbilicus; these arteries then twine round the umbilical vein in the cord, (D. 220) and entering the placenta divide into numerous branches which freely enosculate with those of the umbilical vein. The external iliac arteries descend as in the adult, and the blood is returned by corresponding veins, and enter the inferior cava. Thus we see the fœtal heart, although consisting of two auricles and two ventricles, continues to perform the function only of a single heart, both ventricles assisting simultaneously to propel the same column of blood, namely;—that of the aorta, and thus enabling the heart to act with considerable force. —See Diagrams H. A. 37, 38, 39.

C. 148.—The arteries and veins of a single placenta injected with different colours and dried.

C. 149.—A double placenta, from a woman who was delivered of twins, each placenta is injected with wax; the veins with red, the arteries with yellow. There existed no anastimosis between the vessels of the different placenta.

C. 150.—A triple placenta, from a woman who was delivered of three children, the cords and membranes are quite separate. The woman did well. *Hospital case.*

C. 151.—A human full grown placenta with a portion of the cord attached, on the cut surface of the cord we see the open mouths of the umbilical vessels, they are imbedded in a thick viscid substance, which consists of fine cellular tissue, containing albuminous matter. These vessels pass between the amnion (which although it is the inner membrane of the ovum, is as is well seen in this preparation, the anterior covering of the cord) and also between the two layers of which the chorion is composed, and to which they are intimately connected to supply the various lobules of which the placenta is composed. "Every branch of an artery," says Dr. Hunter, "is attended with a branch of a vein, these cling to one another, and frequently in the substance of the placenta entwine round one another as in the navel string;" and "in the umbilical portion the arteries terminate in the veins by a continuity of canal." The uterine surface of the placenta is covered by a pulpy membrane, which has been called the placental decidua, or decidua serotina, "it produces many irregular processes which pervade the substance of the placenta as deep as the chorion or inner surface, and everywhere is so blended and entangled with the ramifications of the umbilical system, that no anatomist will ever be able perhaps to discover the nature of their union; while these two parts are combined, the placenta makes a pretty firm mass, no part of it loose or floating, but when they are carefully separated the umbilical system is evidently nothing but loose floating ramifications of the umbilical vessels, like that vascular portion of the chorion which makes part of the placentula in a calf, and the uterine part is seen shooting out into innumerable floating processes and rugæ with the most irregular and minutely subdivided cavities that can be perceived. This part answers to the uterine fungi in quadrupeds (see B. 105) it receives no vessels demonstrable, by the finest injection, from the navel string, yet, is full of both large and small arteries and veins; these are all branches of the uterine vessels, and are readily filled by injecting the arteries and veins of the uterus (see preparation C. 157) and they all break through, in separating the placenta from the uterus, leaving corresponding orifices on the two parted surfaces." Thus, according to Hunter, "in the umbilical portion the arteries terminate in veins by a continuity of canal, where, as in the uterine portion there are intermediate cells, into which the arteries terminate, and from which the veins begin."

C. 152.—This preparation beautifully exhibits the fœtus enveloped in its membanes, the innermost and most transparent membrane, which contains the fœtus and liquor amnii, is called the amniotic membrane, and though so transparent and fine, yet, says Hunter, "is firm, so as to resist laceration much more than the other membranes;" its innermost layer is smooth and in contact with the liquor amnii, but externally, it is in contact (except in the earlier periods of embryonic life) with the chorion by what is considered a fine layer of cellular tissue. In this preparation, for a small distance, the two membranes have been separated, and the chorion, which is the proper covering of the ovum, is well seen. This membrane is analogous to the membrana putaminis which lines the shell of the egg in oviporous animals. The chorion is a thin transparent membrane, composed of two layers, between which the vessels which give the external surface such a tufted appearance take their course. Those little groups of arborescent villous processes are well seen in the earlier stages of fœtal life, those surround the whole ovum (see preparation 160) "but after the third month a considerable portion of them disappear, generally, from below upwards, so that a greater portion of the external surface becomes nearly smooth, except at the part where the umbilical cord has its origin, at which spot the villous prolongations become more developed, and unite to form the umbilical vessels;" this part of the chorion, together with the corresponding portion of the membrana decidua, form a circular mass, which at the end of pregnancy covers nearly one third of the surface of the ovum, and constitutes the *placenta*, at this point the chorion which forms its inner surface is considerably thicker than elsewhere.

C. 153.—Fœtus still attached to the placenta and membranes. In this case the cord comes off from the edge, but it is an exception to the general rule, for it usually comes off about the middle of the placenta; when so developed, it is called the *Battledoor placenta.*

C. 154.—This jar contains a fœtus at the full-time, with placenta attached, and forms a spongy vascular mass; its uterine surface is divided unequally into irregular lobes, called cotyledons, these are covered by a pulpy membrane, "resembling the decidua, which covers the chorion," and descends into the sulci which run between them; it is considered by some as the decidua reflexa, yet according to Lobstein "it does not exist in the earlier months," but "that the vessels which compose the fœtal part (as seen in preparation D. 249.) are loose and floating, as if it had been subjected to maceration." Wrisberg of Gottingen, considers that the membrane is distinct from the decidua reflexa, since with care the two membranes can be easily separated, this is called the decidua serotina, (see preparation B. 118 and 119.)

C. 155 —A fœtus about the fourth month, still connected with the placenta and membranes by the umbilical cord. In this preparation are seen the vessels of the fœtus, as they join the cord. The umbilical vein, which conveys the blood to the fœtus, has a bristle passed through it, and is seen passing up to the heart through the liver, the vessels of which are present; below are the umbilical arteries (which, at this period, perform the office of veins); they are seen rising up along the sides of the bladder, and enter the cord just at the navel. In this preparation, also, is seen the amnion, the chorion, and the remains of the vesicula umbilicalis, which at this period is degenerated into a mere white speck, and without any trace of its duct; there is also seen a knot on the cord, which, by its pressure on the vessels, was supposed to be the cause of abortion.

C. 156.—A beautiful preparation of a human placenta, the fœtal, or umbilical vessels of which have been minutely injected, unravelled, and the maternal portion removed. These vessels supply the various lobuli, of which the placenta is composed, so that at least each lobe receives one of those branches; for though the cord consists of two arteries and one vein, this arrangement does not continue into the body of the placenta. "Every branch of an artery," Hunter says, "is attended by a branch of a vein; these cling to one another, and frequently, in the substance of the placenta, entwine round one another as in the navel string." The vessels of one Cotyledon do not anastomose with that of the adjacent one; but, as Hunter says, "in the umbilical portion of the placenta, the arteries terminate in veins by a continuity of canal;" for, as in the present instance, if you inject one umbilical artery, it will return by the other; but, if you tie one artery, it will return then by the umbilical vein.

Presented by Mr. Francis Elkington.

C. 157.—A section from a human Gravid Uterus at the ninth month, with its portion of the placenta and membranes still attached. This specimen was taken from the upper and left side of the uterus contained in jar B. 128; the vessels of the uterus have been injected with red and blue; those of the cord yellow. Hunter's opinion of the vessels of the placenta have been given in No. 151, C.; but as authors are still at variance as to the exact mode by which the placental vessels are formed, perhaps it is better to give the opinions of the recent investigators here; but for the better understanding of this important but still abstruse, subject we had better recur to what does take place in the truly viviparous and placental mammalia when impregnation occurs. Either immediately or a little after conception a simultaneous action is set up in the ovary and uterus; the former *produces the germ*; the latter prepares itself to receive and *nourish the germ* till it is fully developed, to accomplish this the whole organ increases, but first more particularly the uterine mucous lining, this becomes hypertrofied or fully developed; and in the human uterus, according to late writers the "tubular portion becomes thickened and increased in vascularity, and its tubes lined with a white ephithelian. The blood vessels form a net work which extend in loops from the subjacent portion of the membrane, and some of the glandular follicles become widened and enlarged for the reception of the fœtal villi." An exudation likewise takes place on the internal surface of the uterus, which appears like coagulable lymph, having "scarcely a more firm consistence than curd of milk or coagula blood," (Hunter,) this is called Decidua; the uterine vessels are continued into this substance, and form a number of little loops round the villi, there anastimosing with each other; on occount of this reticular appearance it is impossible to distinguish arteries from veins. (Baer.) The germ or ovum, for which this nidus is forming, when it bursts from the ovary, escapes into the fallopian tube, where (as in the oviduct, of the ovipora to which it is analogous) certain parts are superadded for its further development. In the oviporous class, as the germ is to be *developed outside the parent*, and to obtain no assistance from her system, the ovum is supplied with sufficient material for its subsequent nourishment till it can digest food for itself; whereas, in the truly viviparous class or placental mammalia, no such large quantity is provided, for in the latter stages of the evolution of the embryo, it is supplied with *nutriment directly imbibed from its parent*, and this is accomplished by means of the vessels of the chorion (analogous to the membrana putaminis in the egg), which afterwards form the fœtal portion of the placental vessels. From the external surface of the chorion (which covering it acquires in the fallopian tube) a large number of villous prolongations shoot forth; these, in the early portion of fœtal life, serve as absorbing radicles, and form the channel through which the embryo is nourished by the fluids of the parent, until a more perfect communication is formed; this takes place by the *formation of the placenta*, which commences by the penetration of the villi of the chorion into the tubuli of the uterus; these villi serve the combined purpose of roots of plants and the branchiæ of aquatic animals, absorbing from the maternal blood the materials required for the nourishment of the embryo, and aerating that of the fœtus by exposing it to the influence of the parents. This, the earliest and simplest mode by which the fœtus effects a new connection with the parent, is the only one in which it ever takes place in the lower mammalia; in the higher mammalia, however, there soon occurs a great extension of the vascular tufts of the fœtal chorion at certain points, and a corresponding adaptation, on the part of the uterine structure, to afford them an increased supply of nutritious fluid (see preparations A. 109, 110).

These specially prolonged portions are scattered in the Pachedermata C. 167, and Ruminantia 163, over the whole surface of the chorion, forming what are called cotyledons; but in the higher orders, and in man, they are concentrated into one spot; in some of the lower tribes, the maternal and fœtal portions of the placenta may be very easily separated, the former consisting of thick decidua, and the latter composed of the prolonged and ramified vascular tufts of the chorion dipping down into it (C. 172); but in the human placenta, the two elements are mingled together through its whole substance. By Dr. Reid, the terminal ramifications of the vessels of the chorion are represented as consisting each of an artery and vein bound up together, thus closely resembling the arrangement of the vessels of the gills in aquatic animals. Whereas, Weber says each villus termination consists of a capillary vessel, communicating with the artery and vein, and making several turns upon itself, so as to form a series of loops. The *maternal portion of the placenta* may be regarded, according to Dr. Reid, as consisting of a large sac, formed by a prolongation of the *inner coat of the uterine vessels.* Against the fœtal surface of this sac, the tufts just described may be said to push themselves, so as to dip down into it, carrying before them a portion of its thin wall, which constitutes a sheath to each tuft; in this manner the whole interior of the placental cavity is intersected by numerous tufts of fœtal vessels, disposed in fringes, and bound down by reflections of the delicate membrane that forms its proper walls, just as the intestines are held in their places by reflections of the peritoneum that covers them. (*Edinburgh Medical and Surgical Journal*). The blood is conveyed into the placental cavity (119) by the curling arteries of the uterus, and is returned to it by the large veins which are commonly designated as sinuses, the fœtal vessels being bathed in this blood, as the branchiæ of aquatic animals are in the water which surrounds them, not only enables the fœtal blood to exchange its venous character for arterial, by parting with its carbonic acid to the maternal blood, and receiving oxygen from it; but they also serve as rootlets, by which certain nutritious elements of the maternal blood (probably those containing the liquor sanguinis) are taken into the system of the fœtus. The formation of the placenta, in this manner, commences in the latter end of the second month; during the third, it acquires its proper character, and towards the end of gestation, it becomes more dense and less vascular by the obliteration of several of the minute vessels which are converted into hard filaments, and at times by calcareous particles (see C. 158). The present theories and those of Mr. Hunter, if carefully examined, do not, in any way, differ very materially; and a *careful examination* is strongly advised.

C. 158.—A most beautiful specimen of a Human Placenta, exhibiting the numerous little particles of the phosphate of lime, which are sometimes met with on the uterine surface of a full-grown placenta. In this preparation they seem to have been deposited outside the umbilical radicles. This deposit, occurring as it does in the latter period of uterine gestation, when ossification is rapidly advancing in the fœtal skeleton, might lead one almost to suppose that the placenta supplies the material for the bones, and so serve as it does in the early part of embryonic life, as an organ of nutrition, as well as one for producing a change in the blood analogous to respiration. By some, these bony spiculæ observed in the fully matured placenta, are considered as a means of obliterating gradually the vascular connection between the system of mother and child.

Presented by Mr. F. Elkington.

C. 159.—Human placenta dried. On its uterine surface are innumerable small spiculæ of phosphate of lime. In the recent state, when the particles were white, the surface appeared as if thickly coated with crushed bone.

Mr. F. Elkington.

C. 160.—A portion of Human Placenta, macerated.

Dr. Bull's collection.

C. 161.—A Human Embryo, covered by its membranes, with a portion of decidua attached. At this early age the villous prolongations of the chorion are more generally distributed over its surface, than at a later period. (See preparation 152). Likewise, at the commencement of pregnancy, the chorion is but loosely connected with the decidua; and these loose tufts appear to absorb nourishment for the ovum, much in the same manner as the roots of plants.

C. 162.—Human Fœtus and its membranes. There is evidently an arrest of development and a dropsy of the cord, which, when recent, was much more apparent. The vessels of the funis are seen running parallel to each other, and are only very partial in relation with the rudimental villi of the placenta. For some observations on such a condition of these parts, see Velpeau embryologie humaine.

C. 163.—A portion of the chorion of a cow minutely injected; the arteries red; the veins blue. On its external surface (or uterine) are beautifully exhibited the cotyledons, or capillary terminations of the umbilical vessels of the fœtus, collected in bunches, to correspond with the uterine fungi, or caruncles attached to the uterus, and into the numerous lacunæ of which these villous terminations are inserted; on its internal surface are several large vessels going to terminate in the cotyledons.

C. 164.—This beautifully injected portion of the chorion in the cow was removed from the inside of the impregnated cornua of the uterus contained in jar B. 109. The arteries have been injected red; the veins blue, and they are seen to send their tiny streams through the layers of the chorion, rendering it quite vascular, as well as to those little plumulæ which absorb or carry the nutrient or chylous fluid elaborated in those uterine fungi, so well seen in the preparation from whence this specimen was taken.

C. 165.—The membranes and umbilical cord still attached to the lower part of a fœtal calf. The external organs of generation, and also the bicorporeated uterus and appendages are well seen. The cord contains four vessels. In these animals, if there is only one fœtus, the membranes extend through the common cervix into both cornua; the extremity of each cornu is seen.

C. 166.—Portion of the chorion, taken from the uterus of a Sow. The white spots on the surface are the terminations of the umbilical vessels, which are connected with the internal surface of the uterus, this being the form of placenta in these animals.

C. 167.—Fœtal Pig attached to its membranes, which latter are very successfully injected. This was removed from uterus B. 111, and shows the ramifications of the umbilical vessels, and their terminations, in these small cotyledons (which appear white in the previous preparation), and by which their union with the uterus is affected, thus supplying the place of a large placenta.

C. 168.—This jar contains the placenta and membranes of a fœtal Cat. The allantois is also present. In the carnivora, whose placenta extends like a band round the whole ovum, the allantois also lines the whole inner surface of the chorion, except where the umbilical vesicle comes in contact with it. The smooth, or fœtal surface, has been turned out. This preparation has been very successfully injected, and the large vessels running through the layers of the chorion, to receive a supply from the maternal portion of the placenta, are well seen.

C. 169.—Ovum of a Cat, at an advanced period, exhibiting the kitten in its natural position, surrounded by its membranes and belted placenta.

C. 170.—Two fœtal Mice, with their cords, membranes, and pediculated placenta, removed from uterus B. 104, to which organ there are two still attached.

C. 171.—A young Hare, taken from uterus B. 103; it is surrounded by its membranes and placenta. The placenta was injected (whether by rupture of vessels, or through the natural course of the blood) at the same time the uterus was, and also the layer of decidua at the bottom of the jar, which was not permeated when injected from the umbilical vessels. See following preparation.

C. 172.—Ovum of a Hare, exhibiting the leveret surrounded by its membranes and placenta. The placenta has been successfully injected from the cord; the placenta exhibits also the layer of lymph, which is interposed between the external surface of the placenta and uterus, as a decidua; on the uterine surface of this membrane were clearly visible those little decidual cotyledons so well seen in specimen B. 118.

C. 173.—Placenta of a Woman who was delivered about the sixth month of gestation. The membranes are somewhat thickened, and the placenta has become so consolidated, that even the finest injection will not permeate its structure. See C. 175.
Mr. F. Elkington.

C. 174.—Placenta and membranes in a very apoplectic state. The vessels are seen filled with dark blood; on its uterine, or external side, there are large cavities, in which were clots of effused blood; in other parts the texture of the placenta is well seen. See Creuvelheir. *Mr. F. Elkington.*

C. 175.—This is a very valuable and interesting specimen of extensive deposition of lymph over a great part of the fœtus and over the whole cord, the result of chronic inflammation. The placenta is also entirely engaged; it is thin, condensed, and like a piece of thick leather. The inside of the amnion is also studded with innumerable very small elevations, as if it had been dusted over with very fine pounded glass. The whole integuments of the fœtus seem altered. The cord was also round the neck.

C. 176.—Fœtus, with its membranes and placenta cast off at its full time. In this case the fœtus is not fully developed, owing to the circulation being stopped through the umbilical vessels, for the cord has passed round the neck; and from pressure, the last three inches are impervious. The child and placenta seem to have suffered from chronic inflammation ; the former has shreds of lymph over it; the latter is quite impervious and consolidated. There is a small tumour over the child's eye. The membranes are quite tough, which, Dr. Merriman says, "may retard labour occasionally, especially during the second stage." There is also a displacement and hernia of the intestines in the child.

C. 177.—This jar contains a good specimen of dropsy of the umbilical cord; when recent, the effusion into the cellular tissue of the cord was of three times the volume to which it is now contracted, in consequence of the exudation of the contained fluid. There is also in this preparation, just where the vessels from the cord join the placenta, a smooth band; this, most probably, originated in effusion of blood into the cells of the placenta; but the colouring matter having been removed in utero, it now "presents a pale yellow, white, or straw coloured substance, the fibrinous portion of the coagulum being alone left."—See Simpson. The mother and child did well.

C. 178.—Fœtus and membranes cast off at an early period. In this case the cord was very attenuated, and the placenta seems much congested. Over the uterine surface of this placenta is a membrane, which is evidently continuous with the decidua; and the vessels of the chorion can be seen through small interstices in the membrane.

C. 179 —The child, in this case, was noosed just as he was passing through a loop in the umbilical cord; his weight, and most propably motion, drew the loop so tightly, that it has not only indented the child's body, but the umbilical circulation was stopped; and, as in most of these cases, the vessels of the chorion have deposited the nutrient fluid around them, so that there is an increase in the placenta. Cases of knots on the cord, most probably happen between the fourth and sixth month as the cord is relatively longer, and the liquor amnii more abundant about this time.

Mr. Francis Elkington.

C. 180—The specimen contained in this jar, though called a mole, is merely the product of conception blighted; in some cases the fœtus is not to be met with, but here the fœtus is present, but very small, malformed, and with a dropsical cord. In this case, most probably, after the death of the fœtus, as the uterus did not expel the ovum, the nourishment which was collected by the absorbing power of the chorion, was directed to the chorion itself (for the layer of decidua still is over it), which increased rapidly in size, much more so than would be the case in natural pregnancy, at this period.

Presented through Dr. Waddy.

C. 181.—Section of an ovum (or rather the product of conception, for there was no trace of a fœtus) cast off early. There was effusion of blood, which formed one very large clot, through which a section has been made.

C. 182.—A blighted ovum. The vessels of the chorion present the appearance of the roots of a plant, and, most probably, exhibit their natural structure at this time of fœtal life, only preternaturally developed.

C. 183.—Fœtus enveloped in its amniotic covering, this specimen was removed from preparation C. 184, which refer to. The amnion is a great deal thicker and more opaque than natural, caused by the effusion of coagulable lymph, or in other words, of adhesive inflammation. There were yellow floculi of coagulable lymph floating in the liquor amnii, and also a deposition of lymph on the cord. M. Mercier, in his papers on Dropsy of the Amnios, has alluded to the same appearance, in the *Journal General de Med.*, XLV. The amniotic covering of preparation C.175 exhibited the same inflammatory state; but in a less degree. The inflammation appeared to have extended from the chorion in this case.

C. 184.—The specimen contained in this jar, as also that in the preceding, was extracted in this hospital, from a woman who said, that five years previously she had every reason to believe herself *enciente*, that about the third month she had symptoms of miscarriage, yet nothing came from the uterus but large coagula of blood; but after this she slowly recovered, had, at the menstrual periods, a large amount of hœmorrhage, and, occasionally, a "nasty discharge." This preparation most satisfactorily proves the possibility of inflammation occurring in the placenta; and by examining the amniotic membrane of the Fœtus, which was contained in it, we shall find that the cellular tissue between the chorion and amnion was likewise infiltrated with the product of inflammation. Now, as *placentitis* may lead to so many calamitous results to the fœtus, and to the one most pregnant with immediate and impending danger to the mother (that is adhesion of the placenta to the uterus), it may be just as well to refer to the preparations which exhibit this so clearly, and point out where inflammation may originate. *Placentitis, or inflammation of the placenta*, would appear to be, in some cases, acute, in others chronic; in its character and progress, most frequently, perhaps, the latter; it may have its seat either in the proper parenchema of the organ, in the membranes investing its fœtal, or in that investing its uterine surface, or in two, or in all of their parts at the same time. *When inflammation takes place in the parenchema*, it may be limited strictly to one lobe or cotyledon, or it may exist in two or more isolated or even distinct lobes, as was, most probably, the case in preparation 174, C., or it may engage the whole placenta, as 173, C., or it may only attack one, in case of twins, as occurred in the placenta of fœtus, 196. Cruvelheir relates a case of twins, at the sixth month; one of whom possessed the development and characters belonging to that period; the other, from inflammatian at an early period causing congestion, and, subsequently, atrophy, presented the appearance of not more than three months. Placentitis may extend to or originate *in the membranes of the fœtus*, as we see in preparations 175, C., 183, C.; 277, 278, D.; or it may *extend to the fœtus*, 175. *Placentitis may extend to the uterus*; or in cases of *metritis, the inflammation may extend to it*, and adhesion may take place, as in preparations 414, 415, 416, 417, 418, G., and as this ultimately proves one of the principal sources of danger and fatality to the parturient female, "there being scarcely one in the whole circle of practical midwifery more pregnant with immediate and impending mischief," it would be wise of the practitioner to look well to the symptoms of inflammation in its early stage, and particularly if his patient's uterine system seems predisposed to take on this peculiarity; for it often happens over and over again in the same patient. Dr. Simpson's paper, in No. cxxvii of the *Edinburgh Medical and Surgical Journal*, deserves a very careful perusal; and also a careful examination of this specimen is recommended.

C. 185.—Human Ovum aborted about the seventh or eighth week, and is a very good specimen of what is called "tubercular disease of the ovum;" but in this case there is no growth of substance, but these projections are the result of hœmorrhage from some of the uterine or umbilical vessels: this lobular or tuberculated appearance is chiefly seen from within, the amnion being raised by a number of convexities. The little funis is also distended, being nearly as thick as the embryo itself, which is blighted, the blood having penetrated from the placental cells into the cellular tissue of the cord, and thereby impeded the circulation.

C. 186.—The placenta of an early Ovum affected with what is called tubercular disease. A section is made to show the nature of the tumours which are composed of extravasated blood, in a state of great condensation. There was no trace of a fœtus, except we can consider as such a small enlargement at the extremity of the umbilical cord, which appeared in a shrivelled state.

C. 187.—A human Ovum and Membranes cast off about the sixth week. There is a tuberculated appearance from the effusion of blood into the substance of the placenta. The fœtus, partly decomposed, is suspended from one of these tubercles. The remains of the umbilical vessel is present, and also a small portion of the decidual envelope.

C. 188.—Human Ovum. In this case a deposition of tubercular matter (see 222) seems to have taken place between the amnion and chorion; the vessels of which latter membrane present, at their extremities, bunches of very minute globular bodies, which in some instances are reticular, in others, prefectly solid. A small fœtus is attached, the inferior extremity of whose vertebral column resembles the rudiment of a tail, and is carried forward under the rectum; the cord was dropsical.

C. 189.—This is a good specimen of blighted Ovum, caused by a morbid degeneration of its membranes; the external or decidual envelope seems to be the one engaged, or at least the maternal portion of the placenta; for the amnion and the internal layer of the chorion are present, and in a thickened state, and through the indurated substance some of the fine vessels of the chorion are seen. The fœtus was partially decomposed, the upper part having nearly separated from the body.

C. 190.—A blighted Fœtus, with dropsy of the cord. In this case the cells of the placenta have given way, and blood has been extravasated into them and between the membranes; and the ovum has been cast off early. Dr. Simpson, on this subject, says, "when blood is poured out from its containing vessels into the substance or cells of the placenta or between the membranes, it gradually coagulates and assumes a very dark purple, and, sometimes, almost a melonotic black colour; but if time sufficient be allowed before it is cast off, it begins to lose this tint, the colouring matter gradually being removed. (See preparation C. 177). This form of mole seldom attains any considerable size.

C. 191.—An Ovum, blighted at a very early period, and cast off, the membranes have been inverted, and the inner surface looks quite tuberculated from the infiltration of blood.

C. 192.—Membranes of a blighted Ovum. The decidual coverings are in an apparently healthy state; but there was not the slightest trace of a fœtus. In this preparation, however, the absorbing extremities of the vessels of the chorion present a very hypertrophied or abnormal character, and are in the early stage of what may be considered the hydatid state, which is seen more fully developed in preparation C. 206; but in this preparation, I think, it will be plainly seen that these little globules are not real hydatids, but a dropsical state of the venous radicles of the chorion; and though occasionally, as in preparation 205, real hydatids may be found among them; still, as these so-named hydatids are invariably connected in the blighted ovum, they are more likely to be so in the present case, only the absorbing extremities of the fœtal vessels filled with serum; and, perhaps, the ultimate termination of these vessels in the normal state may end in shut sacs, and that there may be the same kind of relation, only a little modified, between the umbilical vessels and maternal blood which fills the placental cells, (see preparations C. 151, 157) as there is between the branches of the pulmonary arteries and the air which fills the bronchial cells; and as we shall find among the lower classes of animals, often an original type of some human monstrosity, so we shall sometimes find, if we carefully look among hypertrophied structures, as, preparation G. 432, a clue to the natural state of structures, which are less perceptible to the naked eye when only normaly developed.

C. 193.—Remains of a blighted Ovum. The amnion, the chorion with its vessels in a very abnormal state, and the decidua vera and reflexa are well seen; the cords are also present; but there was no fœtus, it having been entirely decomposed, this decomposition, according to Smellie, in the two months, fœtus, may take place in two or three days after the embryo dies, and if in the first month, "this dissolution will be performed in twelve hours."

C. 194.—Embryo aborted at a very early age. The vessels of the chorion, in this case, also are in an unhealthy state, similar to preparation 192, only at an earlier stage; and the fœtus seems to have been arrested in its development before the abdominal parieties closed in the mesial line, or linea alba.

C. 195.—A small Fœtus, with malformation of the hands, a knot on the cord and umbilical hernia. In the very early stages of embryonic life, "the fœtus is as it were spread out;" but after a time it closes in the mesial line. Occasionally there is an arrest, causing hare-lip, cleft palate, &c.; and sometimes the integuments of the navel are left deficient, or, in other words, as before us, congenital umbilical hernia.

C. 196.—A Fœtus, one of twins, blighted and flattened, with a knot on the cord, which rendered the circulation quite impossible.

C. 197.—A young Fœtus, said to be borne by a woman labouring under small-pox. There is a very interesting paper on this subject by Dr. John Hunter, in the Philosophical Transactions, vol. 70. He says it may be communicated in two ways—"by infection from the mother," and "by the mother having absorbed the small-pox matter from some other person; and the matter being carried to the child from the connection between the two." Van Sweiten, Dr. Mead, Mauriceau (who himself "came into the world bringing with him sixteen fine large pustules;") and others, also, bear testimony that children have been born with pustules on them; but the reason why we have not more instances of it is, that pregnant women, when seized or inoculated with small-pox, generally miscarry, or both mother and child die before the disease can have time to produce eruption on the child in utero. Dr. Hodgkin also relates a similar case, in the Guy's Hospital reports.

Presented through Mr. Francis Elkington.

C. 198.—Human Fœtus, cast off in consequence of active inflammation occurring in the placenta, and extending to the child, which was, when recent, covered with lymph, some of which has been converted into distinct firm shreads. This is a subject of great interest, as the effusion of "organised lymph, such as is usually elaborated under the influence of inflammatory action," it is well known, leads to several variations of fœtal deformity.

There is a good paper on this subject by the author of "Symptoms and Signs of Pregnancy," under the head of "Spontaneous Amputation of the Limbs in Utero;" and, by referring to preparations C. 175, and D. 271, 272, &c., in the Museum, we shall find specimens of the dangerous effects of inflammation to the child in utero; and as this is one of a dangerous nature, and yet "generally considered amenable to medical treatment," attention to the first symptoms of placentitis is strongly recommended; and a perusal of Dr. Simpson's Treatise on this subject may save the life of many a mother, and give to Briton a noble son.

C. 199.—Portion of a human Umbilical Cord, showing an unnatural contortion of the vessels. See Boudelocque.

C. 200.—Knot on the cord. The child was very healthy and well. *Hospital case.*

C. 201.—A Funis, with a very complicated knot on it, formed in utero. The vessels are quite pervious. On this subject, Boudelocque says that he has not only met with single, but even triple, and very complicated knots tied tightly on the cord; and yet the child was not only born alive, but remarkably robust and healthy, and that these knots seldom injure the child.

C. 202.—Umbilical cord, with a knot on it. The circulation was not stopped, but merely impeded; but the vessels on each side of the knot were enlarged, and varicose, particularly the placental end, and the cord itself, at the knot, was from constant pressure flattened.

C. 203.—A human Ovum, affected with the abnormal growths, usually termed hydatids; a large bunch is seen depending from the remains of clots, which originally had been effused between different parts of the chorion and decidua.

C. 204.—A mass of uterine Hydatids, or Hydatid Mole. These peculiar growths are here seen of every size and form, and were covered by a firm coat of decidua, which was everywhere interposed between them and the uterus. There was no trace of a fœtus.

C. 205.—Placenta of a woman, who miscarried at the third month. The fœtus (E. 211) had been dead for some time: great part of the placenta was converted into the substance in the jar, and tore up into shreds, and could, with great difficulty, be removed. In this placenta were also found a few true Acephalo cysts, or real Hydatids. *Hospital case.*

C. 206.—Hydatid degeneration of the Ovum, at the third month: a very beautiful specimen. It consists of numerous bunches of small semi-transparent vesicles, varying from the size of a millet seed to that of a pea, closely grouped together, and supported on delicate foot stalks; the disease is most probably seated in the villi of the chorion. See preparation C. 192.
Mr. G. Elkington.

C. 207.—This is another very interesting specimen of an abnormal development of the terminating radicles of the chorion, generally called Hydatids. There was no trace of the fœtus, but a great portion of the blighted conception was composed of small semi-transparent vesicles. In some parts, however, there is a part of the uterine portion of the placenta interposed between these vesicles.

C. 208.—Human Fœtus, expelled in the seventh month; but exhibiting only the usual development of the third month. "Mrs. J. believed herself pregnant in the beginning of March; in the beginning of June she began to sink in size, had a vaginal discharge for six weeks previous to aborting, which occurred on the fifth of October. She never felt the motion of the child; the placenta was expelled three days after the fœtus, of corresponding size, and apparently healthy in its structure. Mrs. J. is the mother of six living children. Previous to the birth of her last child; she had two miscarriages, at an interval of 12 months from each other, aborting each time about the end of the sixth month; the fœtuses arrived in each instance at similar stages of development, dying before quickening, without any discernable cause." Such cases as the above possess an interest and a demand on our attention, of a very important kind, as illustrative of the necessity for carefully examining into the state of the fœtal appendages, as to their healthy condition, or otherwise, before we venture to pronounce an opinion on the time that has elapsed since conception, merely from the size or general appearance of an ovum, or fœtus, shown to us; for had the husband happened to die, or to have gone from home shortly after the time of conception, and the accident to have occurred in the same way, the female might have sustained, though most unjustly, a severe injury to her reputation. See Dr. Montgomery's Exposition of the Signs of Pregnancy, &c.

Presented by Mr. Mackay.

C. 209.—Umbilicus of a child, who died some months after birth, of hæmorrhage from one of the umbilical arteries. The two arteries are present, with the remains of the uracus attached to the top of the bladder between them; a bristle has been passed through the pervious canal. *The bleedings* which occur after birth, from the *funis* umbilicalis, and from the *umbilicus* after separation of the cord, though usually confounded, are distinct; distinct, at least, as to their cause and mode of treatment. Hæmorrhage from the cord, after birth, may take place from the funis being unusually *thick*, in consequence of a *large quantity of gelatinous matter* being contained in the tissue around the vessels, which, upon exuding, leaves the ligature quite loose, and so permits of the escape of blood, or the umbilical cord may be diseased, being either partially ossified, or of cartilaginous firmness, as in the case related by Mr. Logan, in the *Edinburgh Journal*, rendering the texture very fragile; or the umbilical vein may be in a varicose state; and Dr. Dewes says, that in the course of two or three days, hæmorrhage may come on in consequence of ulceration taking place in the side of the vein, from the ligature being tied so as to include the diseased portion that is nearer to the placenta than the diseased portion of the vein. *When bleeding occurs from* *the umbilicus*, it is a far more serious thing; and though sometimes the blame is attached to the Accoucheur, it is generally the constitution of the infant is at fault; for, in these cases, though complete separation of the navel-string may have taken place, yet, we find that the closure of the vessels is not effected by the powers of nature, which, in a healthy state of the constitution, generally takes place between the fourth and seventh day; from these vessels originate this hæmorrhage, which almost invariably proves fatal; it may commence from artery or vein, to distinguish which is important, as cutting down on the vessels is recommended; and as they lie in different directions, it may save a large orifice to know precisely beforehand, and therefore lessen the chance of inflammation taking place; in addition to this remedy, pressure, actual cautery, astringents, &c., have been recommended.

C. 210.—Ulceration of the umbilicus in an infant which died three weeks old. The ulcer had passed direct through the tunics to the peritoneum, which, however, was not perforated, although softened, so that the tissue gave way after death, on examination with a probe. The infant was unhealthy, and had an ulcer of a similar character under the left eye, on the cheek, which, however, had almost healed prior to death; there was no peritonitis. The lungs (see preparation C. 213) of this infant had been only partially inflated, the chief portion of them presenting the tough elastic dense tissue of fœtal lung, through which no air permeated. See a paper on this subject by Dr. Radford, in the *Edinburgh Journal.* *Hospital case, Mr. Figgin.*

C. 211.—Foramen Ovale open in the second year; the child was but feebly developed, and was of a dark colour. See F. 320.
Mr. F. Elkington.

C. 212.—Spina Bifida in a male infant; the disease is confined to the upper part of the sacrum. At birth the legs were contorted by flexure of all the joints, the infant began to pine after the fourth day, refused the breast on the sixth, was convulsed from the seventh, and died on the ninth. On each side of the cauda equina was at first a small oblong thin covering, distended with fluid, which after birth collapsed on the right side; while that on the left had at the top a small air bubble, which passed in and out with the respiration, alternately distending and collapsing the bleb, this also caked on the third day. The lower extremities were not affected by the convulsions, but remained throughout in the same contracted state. The slightest pressure on the cord produced convulsions. For anatomy see appendix, also Cruvelheir. *Mr. Figgin's Hospital case.*

C. 213.—The lung of an infant three weeks old, which suffered from imperfect respiration from birth; the greater part of this lung is in a dense tough elastic state, like the fœtal lung, devoid of air, except towards the thinner edges, and in patches here and there, well seen in the recent state. Child died with ulceration of the umbilicus. See preparation C. 210.

Hospital case, Mr. Figgins.

C. 214.—Parietal Bone, from the head of Eveline Hay, affected with hydrocephalus. "At birth the head was so much enlarged as to cause considerable difficulty in the delivery of the mother, who was accustomed to have easy labours with well grown children; five weeks after birth the head was greatly enlarged, measuring 21 inches in circumference, occipito-frontal diameter 7¼ inches, bi-parietal 6¼, all the sutures being wide open even down to the root of the nose. The child lived one year and eight months without suffering the slightest illness till within a month of its death, when it got diarrhœa. The dimensions of the head were, in circumference, 31½ inches, occipito-frontal diameter 10, bi parietal 9 inches; it weighed 15 pounds, and contained 6½ quarts of water. The sutures were in some places separated to the extent of six inches. A case very much resembling this is related by Dr. Read, in the *Edinburgh Medical Journal*, July, 1815, in which the child lived till near five years of age, when he died of an epidemic influenza. His faculties expanded faster than was usual in children of his age, his vision was perfect, his hearing acute, his memory quick and tenacious, and his correctness in his childish affairs very remarkable. This child and the succeeding one were patients of Dr. Montgomery, of Dublin; and the original specimens are in his valuable museum. There is also recorded the case of a young man who lived to 20, in whom the head arrived at an enormous size; I think the original of this case is in Guy's Hospital.

C. 215.—Cast taken from the head of a boy, eleven months old, affected from birth with hydrocephalous, by which the sutures were separated in some places as much as four inches; the head was tapped with relief, but in about a month he died. On examination, the edges of the bone seemed partially absorbed, and there were several holes in the parietal bones. The brain was converted into a sac of fluid, whose parieties were about a line thick, all traces of its proper structure, divisions, &c., were lost; but it was intersected by cords, which seemed to be remains of its proper conformation. Dimensions—Circumference, 25 inches, bi-parietal diameter, 7½ inches, occipito-frontalis, 7¾.

PART IV.

D.

The Human Ovum, in 40 weeks, or 280 days, seems to accomplish its term of intra-uterine existence; for at the end of that period Labour generally comes on; and if the ovum be expelled alive, its whole life's system again undergoes a change. Though 40 weeks is given as the general term of human gestation, still the Fœtus may be retained in utero for some time afterwards; and this, most probably, oftener occurs than is supposed. The latitude in the gestation of the lower animals is often very great. Calving or Foaling may take place before or after the average time; but as this is a subject of great importance to the Medical man, as a Jurisprudist, he must refer to the different authorities on this subject. But one of equal importance to him as a Jurisprudist, and one on which he is oftener called to give his opinion is—"when is a child viable;" and at what period of utro-gestation may it be when cast off from the uterus. This subject, also, to the practitioner is one of great interest. Children are recorded to have lived when the period of gestation was less than 19 weeks; they have lived at 24, 25, and 27 weeks, but these are the extreme exceptions to the general rule. There is one point of interest to know with regard to the breeding of Hybrids, which is, that the dam carries the fœtus, for the time that is naturally the longest in sire or dam. There have been placed in this section Specimens of the Human Fœtus, in the different months of gestation ; and a description of the general characters of each given. But as so many circumstances prevent the possibility of giving an exact delineation at every particular week, the description, must be understood as only a *general* one. The first and earliest development of the human germ, and that of the ovipora to which it is exactly similar, up to a certain stage, is given along with the Plates under the head of H. ; but Specimens from the time the embryo passes from the fallopian tube into the uterus, up to the time of its expulsion from it, are given. Under this are placed—the organs that seem most active in embryonic life, and the mammary gland ; for, though the product of this organ is not essential to the human embryo, it is to some of the inferior mammalia, as the Marsupial ; and perhaps we might say the Rat, to which the *Dorsigenous* Opossums, in some respects, seem allied.

D. 216.—Head and Trunk of a Female Black Child, who died a few hours after delivery. The anterior parieties of the thorax and abdomen have been removed to show the viscera contained in their cavities. The external organs are largely developed.

D. 217.—Trunk of a Male Fœtus, about the ninth month, the full time. *The general characters are—in length, from* 17 *to* 21 *inches; weight, from* 5 *to* 9 *pounds ; the average, probably, about* 6½ *pounds. Head covered with hair, in a less or greater quantity, from* 9 *to* 12 *lines in length. Skin covered with sebaceous matter, especially, at the bends of joints. Membrana pupillaris no longer exists. External auditory meatus still cartilagenous. Four portions of occipital bone remain distinct. Os hyoides not yet ossified ; point of ossification in the centre of the* *lower extremity of the femur. White and grey substances of brain become more distinct. Liver descends to the umbilicus. Testes have passed the inguinal ring, and are generally found in the scrotum; meconium at the termination of the large intestines; middle point of the body at the umbilicus, or a little below it.* The anterior parieties of this specimen have been removed to show the visceral and thoracic organs. The remains of the uracus attached to the top of the bladder is well seen, and also the testicles in the scrotum, and cord.

D. 218.—Twins—Females; these were contained each in a separate amniotic bag of membranes, similar to 149. But had they, in early embryonic life, been contained in only one bag of membranes, as we know is sometimes the case, and lay for any length of time in contact, we may believe it quite possible for a junction of the two bodies to have occurred, and so cause such cases as the Siamese, &c.

D. 219.—Male Fœtus about the eighth month. *The general characters are—length,* 14 *to* 16 *inches; weight, four or five pounds. Skin covered with well marked sebaceous envelope. Nails reach to the extremity of the fingers. Membrana pupillaris becomes invisible during this month. A point of ossification in the last vetebra of the sacrum. Cartilage of inferior extremity of the femur presents no centre of ossification. Brain has some indications of convolutions. Testicles descend into the internal ring. Middle point nearer the umbilicus than the sternum.* The anterior parieties, in this specimen, have been removed to exhibit the heart, kidneys, bladder, testicles, &c. In this specimen the supra-renal capsules are very large, which is still more apparent in early embryonic life, they begin to decrease about the sixth month, and with regard to the kidney are as 1 to 2¼; at birth the weight of the kidney is three times that of the supra-renal capsules. In the adult they are very small; but lately, at the Pathological Society, in Liverpool, there was one brought forward which was nearly half the size of the kidney, and consisted of two distinct kinds of substance,—a cortical and medullary; in fœtal life this is also the case; "the *cortical* substance being of a yellowish colour, and consisting of straight parallel fibres, arranged side by side; a large part of these straight fibres are branches of arteries, which enter this body at every point of its exterior from an envelope of capillary net work which covers its surface; and others are corresponding branches of veins that receive the blood from those arteries, and convey it into a venous plexus, of which the *medullary* substance is chiefly composed; by the union of the veins of this plexus is formed the large central vein of the organ, and this is the only cavity it contains; no apparatus of secreting tubes or cells can be detected in it," and its functions are entirely unknown, but it is supposed to be a diverticulum for surplus blood in embryonic life, such as the spleen.

D. 220.—Injected Female Fœtus. The spiral arrangement of the vessels of the cord are beautifully exhibited, as also the large size of the left lobe of the liver, which is much larger in proportion in fœtal than in adult life.

D. 221.—On different parts of this specimen were found, at birth, patches of a substance, like calcareous deposit.

Dr. Bull's collection.

D. 222.—Fœtus beautifully injected, showing the great vascularity of skin, lips, viscera, spinal cord, &c. The theca vertebralis has been opened superiorly. There is a deposition of scrofulous matter in the parenchema of the lung.

D. 223.—Trunk of a Fœtus, to exhibit the great vascularity of skin and viscera.

D. 224.—Female Fœtus, about the seventh month; the general characteristics are—*length*, 13 *to* 15 *inches; weight, from* 3 *to* 4 *lbs; skin of rosy hue; thick and fibrous sebaceous covering begins to appear; nails do not yet reach extremities of fingers; eyelids no longer adherent; membrana pupillaris disappearing; a point of ossification in the Astragulous; Meconium occupies nearly the whole of the large intestines; valvulæ conniventes beginning to appear; cæcum placed in right iliac fossa; left lobe of liver nearly as large as* *right; gall bladder contains bile; brain possesses more consistency than at six months; also the testicles are more distant from kidneys; middle point at a little below the end of sternum.*

D. 225.—Trunk of Male Fœtus, showing the larger vessels of the circulatory system, and also the heart itself, which is minutely injected.

D. 226.—Trunk of Male Fœtus, to exhibit the contents of the thorax and abdomen. Superiorly we see the thymus gland dividing into two lobes, covering the heart anteriorly and superiorly.—See preparation 261. On each side of the heart, which is invested by the pericardium, are the right and left lung; separating the thoracic viscera from the abdominal is the diaphragm; then comes the liver, the two lobes of which are of nearly equal size; posteriorly and inferiorly are the kidneys; below that, and to the left side, appears the cut portion of the descending colcn; then the bladder and the testicles descending through the rings to the scrotum; the umbilical cord is present, with the vein ascending to the liver, and the two arteries descending along the sides of the bladder: these vessels in fœtal life carry venous blood. See circulation, C. 147.

D. 227.—Trunk of Male Fœtus, to exhibit the thoracic and abdominal viscera, and the uro-genital organs. The embryological development of these organs in vertebrated animals is a subject of peculiar interest. In the early stages of embryonic life, the kidneys and testes (or ovaria) both arise from the "corpora Wolffiana," the kidneys from their upper and outer parts, the testes from their lower and inner sides; the correspondence which the kidneys present at different times, to what is the permanent condition in the lower animals, can be beautifully traced in their different transitions during fœtal life. In the human embryo, "the Wolffian bodies begin to appear towards the end of the first month; and it is in the course of the seventh week that the true kidneys first present themselves. From the beginning of the third month the diminution in the size of the Wolfian bodies goes on *pari pasu*, with the increase of the kidneys; and at the time of birth, scarcely any trace of them can be found. At the end of the third month the kidneys consist of seven or eight lobes, the future pyramids; their excretory ducts still terminate in the same canal, which receives those of the Wolfian bodies and of the sexual organs, and this opens with the rectum into a sort of cloaca, or sinus uro-genitalis, analagous to that which is permanent in the oviporous vertebrata; the kidneys are, at this age, covered by the supra-renal capsules, (see preparation D. 219) which are very large; the lobulated appearance of the kidneys generally disappears in the human subject. But in the Porpoise, Seal, and other animals, it is the permanent type. The urinary bladder is formed quite independently of the secreting apparatus, the bladder being a part of the allantois, which is first developed as a large cæcum, or diverticula from the lower extremity of the alimentary canal.

D. 228.- -The Respiratory and Circulatory Organs, and the Chylopoietic Viscera of a Child in situ, and injected.

D. 229.—Fœtus about the sixth month. General characters —*the length,* 9 *to* 10 *inches; weight,* 1 *pound; the skin presents some appearance of fibrous structure; the eyelids are still agglutinated, and the membrana pupillaris remains; saculi begin to appear in the colon; the funis is inserted a little above the pubis; the face is of a purplish red; the hair, white or silvery; the sebaceous covering, on the skin, begins to present itself; the meconium appears in the large intestines; the liver is of a dark red colour; the gall-bladder contains a serous fluid destitute of bitterness; the testes are near the kidneys; points of ossification appear in four divisions of the sternum, the middle point at the lower the end of the sternum.*

D. 230.—Fœtus about the fifth month. The general characters are—*length,* 6 *to* 7 *inches: weight,* 5 *to* 8 *ounces; volume of the head still comparatively great; nails very distinct; the hair beginning to appear; the skin is without sebaceous covering; the white substance in the cerebellum; the heart and kidneys are very* *voluminous; the cœcum is situated at the inferior part of the right kidney; the gall-bladder is distinct; germs of permanent teeth appear; points of ossification in the pubis and calcaneum; the meconium has a yellowish green tint, and occupies the commencement of the large intestine.*

D. 231.—Male Fœtus between the fourth and fifth month.

D. 232.—Male Fœtus exhibiting the kidneys, supra-renal capsules, umbilical cord, testes, and gubernaculum testis.

D. 233.—This specimen exhibits the Thymus Gland, Heart, Pericardium, Lungs, Diaphragm, Stomach, Kidneys, Supra-Renal Capsules, Bladder, and Testicles; these latter organs are high up in the abdomen, and in the early stages of embryonic life arise with the kidneys from the "corpara Wolfiana;" the kidneys arise from the upper and outward part; the testes from the lower and inner sides. In the human embryo the rudiment of the sexual organs, whether testes or ovaries, first present themselves; soon after the kidneys make their appearance, that is towards the end of the seventh week (see preparation D. 227), they are first much prolonged, and seem to consist of a kind of soft homogeneous blastema. in which the tubular structure subsequently developes itself; the ovary at that period has the same aspect and texture, but its subsequent course of development is different; the testis gradually assumes its permanent form; the epididymus appears in the tenth week; and the gubernaculum (a membranous process from the filamentous tissue of the scrotum, analogous to the round ligament arising from the labium, and attached to the ovary of the female) which is originally attached to the vas differens, and so well seen in this preparation, gradually fixing itself to the lower end of the testis and epididymus; the testes begin to descend at about the middle of pregnancy, at the seventh month they reach the inner ring; in the eighth, they enter the passage; in the ninth they usually descend into the scrotum; sometimes one or both remain in the abdomen, which condition is natural in some animals; it does not impair their functions.

D. 234.—Male Fœtus, before the fourth and fifth month.

D. 235.—Male Fœtus, with anterior parieties of the abdomen, removed to exhibit the contents of the thoracic and abdominal cavities.

D. 236.—Female Fœtus, about the fourth month. The general characters are—*length, 5 to 6 inches; weight, about 3 oz.; the skin rosy and tolerably dense; the mouth very large and open; the membrana pupillaris very evident; the nails begin to appear; the genital organs and sex distinct; the cæcum placed near right kidney; the gall-bladder appearing; the meconium in the duodenum; the cæcal valve visible; the umbilicus near the pubis; the ossicula auditoria ossified; points of ossification appear in the superior part of the sacrum; membrane forming at a point of insertion of the placenta on the uterus; camplete contact of the chorion with* the *amnion.*

D. 237.—Male Fœtus, exhibiting the thoracic and abdominal viscera, the testes, and umbilical cord. The vessels of the liver are most beautifully seen, the interstitial portion having been removed. *Mr. F. Elkington.*

D. 238.—Female Fœtus, with the clitoris largely developed.

D. 239.—Female Fœtus, with the clitoris even more largely developed than the last.

D. 240.—Male Fœtus; abdominal parieties removed, to exhibit the position of the intestines and liver, the right and left portions of which are of nearly equal volume.

D. 241.—Fœtus; perhaps a little more than the third month. *The general characters of the third month are—length, about 2½ inches; weight, 1½ ounce; head voluminous; the eyelids in contact by their free margins; the membrana pupillaris visible; the mouth closed; the fingers completely separated; the inferior extremities of greater length than the rudimentary tail; the clitoris and penis very long; thymus gland, as well as the supra-renal capsules present; the cæcum is placed below the umbilicus; the* *cerebrum is five-lines; cerebellum, four-lines; medulla oblongata, 1½; medullas spinalis, ¾ of a line in diameter; two ventricles of the heart distinct; the decidua reflexa and uterina in contact; the funis contains umbilical vessels, and a little of the gelatine of Worthan; the placenta is completely isolated; the umbilical vessicle; allontois and omphato messenteric vessels have disappeared.*

D. 242.—Embryo of about the second month. The general characters of which are—*length, from* 16 *to* 19 *lines; weight, from* 150 *to* 300 *grains; the elbows and arms detached from the trunk; the heels and knees also isolated; rudiments of the nose and lips appear; the palpebral circle beginning to show itself; the clitoris or penis apparent; the anus marked by a dark circle; rudiments of the lungs, spleen, and supra-renal capsules; the cæcum is placed behind the umbilicus; the digestive canal withdrawn into the abdomen; the uraeus visible; an osseous point appears in the frontal bone and in the ribs; the chorion commencing to touch the amnion at the point opposite to the insertion of the placenta; the placenta begins to assume its regular form; the umbilical vessels commence twisting.*

D. 243.—Embryo about six weeks. *Length, from* 7 *to* 10 *lines; its weight, from* 40 *to* 70 *grains. Face distinct from the cranium; aperture of the nose, mouth, eyes, and ears perceptible; head distinct from the thorax; hands and face, arms, in the middle of the length; the fingers distinct; legs and feet situated near the anus; the clavicle and maxillary bone, each present a point of ossification; distinct umbilicus for the attachment of the cord which about this time consists of the omphalo mesenteric vessels, of a portion of the uracus, of a part of the intestinal tube, and of filaments which represent the umbilical vessels; the placenta begins to be formed; the chorion still separate from the amnion; the umbilical vessels very large.*

D. 944.—*Embryo of about the fourth week; it has the form of a serpent coiled up; its length from* 3 *to* 5 *lines; its head indicated by a swelling; its caudal extremity (in which is seen a white line indicating the continuation of the medulla spinalis)* *slender and terminating in the umbilical cord; the mouth indicated by a cleft; the eyes by two black spots; the members begin to appear as nipple-like protuberances; the liver occupies the whole abdomen; the bladder is very large; the chorion is villous; but its villosities are still diffused over the whole surface.*

Mr. F. Elkington.

D. 245.—The Membranes of a very young Fœtus; the fœtus itself has dissolved, being, at this period of intra uterine life, like jelly. *Presented by Mr. Clarkson.*

D. 246.—Decidua Reflexa, Chorion, and Amnion; the decidua is, in some places, becoming quite cribreform. Fœtus dissolved.

D. 247.—Decidua, Chorion, and Amnion, all three quite distinct. Between the chorion and amnion is the remains of the vesicula umbilicalis. The vessels of the chorion are also distinct. *Presented by Mr. Clarkson.*

D. 248.—Fœtus, with the amniotic covering next it, and the chorion outside, from which are shooting some small vessels.

D. 249.—This is a very unique and beautiful preparation of a very early human Embryo, enveloped in its membranes; externally is the decidua; more internally, the chorion, shooting out its villi, or rootlets; and more internally, the amnion, which, at this early age of embryonic life, is very small; there is a fluid contained between the amnion and chorion, which fluid, after a time, is absorbed, but sometimes it is not so, and this constitutes the *liquor amnii spurius*; within the amnion of the fœtus is the umbilical vesicle, allantois, &c. The yolk sac is early separated in the mammalia by a constriction of the portion which is continuous with the abdomen of the embryo, and is known, from that time, under the name of *umbilical vesicle*; the communication, however, remains open, for a time, through the constricted portion, which is termed the *vitelline duct*, and even after this has been cut off, the trunk which connected the circulatory system of the embryo with that of the vascular area is still discernible. "It was formerly believed that the nutrient matter of the yolk passed directly through the vitelline duct into the (future) digestive cavity of the embryo, and is, from it, absorbed into its structure; but there can now be little doubt that the vitelline vessels are the agents of its absorption, and that they convey it to the tissues in process of formation;" they do, in fact, correspond to the mesenteric veins of invertebrated animals, which are the sole agents in the absorption of nutriment from their digestive cavities, and the yolk bag is the temporary stomach of the embryo; remaining the permanent stomach in the radiated tribes. *Mr. G. Elkington.*

D. 250.—A blighted ovum; the umbilical vesicle is very large, and the spinal column extended like a tail.

D. 251.—Fœtus in its membranes; the cord is thick, and the intestines are still contained in it. In cutting the membranes open the vesicula umbilicalis has been cut across; it is seen at the top and left side, with the duct still attached and entering the cord.

D. 252.—Human Fœtus in its membranes; part of the decidua has been removed, and also the chorion, and on the external side of the amnion are the remains of the umbilical vesicle. See preparation C. 155.

D. 253.—

D. 254.—

D. 255.—Fœtal Ass.

D. 256.—Fœtal Lamb.

D. 257.—Fœtal Rat.

D. 258.—Series of Tadpoles, and Allontois of a Frog.

D. 259.—Metamorphus of Insects—Ants.

D. 260.—Allontois of Human Fœtus.

D. 261.—Thymus Gland of the Human Fœtus.

D. 262.—Thymus Gland of the Calf.

D. 263.—Thymus Gland of the Fowl.

D. 264.—Fœtal Kidney injected.

D. 265.—

D. 266, 267.—Two Wax Casts of Human Mammæ.

D. 268.—Fœtal Mole—a Mammary Gland.

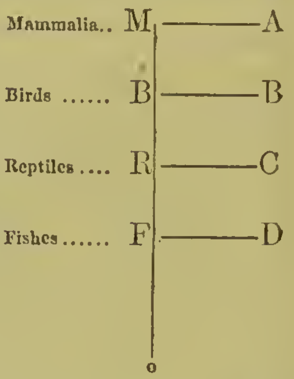
D. 269.—Stomach of the Fœtal Calf.

D. 270.—Crop of a Pigeon. See Appendix.

PART V.

E.

This Section contains Preparations, Casts, &c., of different forms of Monstrosity, or irregularities and Malformations in Man and Animals; and we are sorry to say that general experience, and the Specimens in this Museum, "force upon us the sad truth that the seeds of life are often sown adulterated with those of infirmity or decay, that disease may mutilate, and death destroy, even before our entrance into life. For as far as investigation has enabled us to reach, we have reason to believe that the child, before birth, is not only liable to certain affections which may be considered *peculiarly its own*, but it is also subject to almost all which *affect the adult*; of these affections some appear to be, First—strictly innate in the constitution of the fœtus; Secondly—some communicated by infection from the mother's system; Thirdly—some from the father's system, or, perhaps, *through* that of the mother; she, herself, not being the subject of the infection entailed, as in certain forms of syphilis, scrofula, and small pox; Fourthly—some from strong mental impressions on the mother; Fifthly—some arising from morbid alterations in the envelopes of the ovum, the placenta, and cord, or in the uterus itself; Sixthly—some from the influence of external agents, as falls, blows, pressure, &c." (See Professor Montgomery's' of Dublin, excellent article on the abnormal anatomy of the fœtus). Under the head C. we shall find many examples of the above affections; but this section E. contains specimens of those that are more immediately and innately connected with the development of the fœtus itself; unless we are inclined to believe that long continued strong mental impression on the mother, during the early evolution of the embryo, effects the development of the germ so as to mould it (could we use the term) into the form of the imagined image, which we believe is the case often, or that the uterus has a predisposition to form such, as it is known some animals will only bear one sex during a whole life; and even women have borne seven or eight different children similarly affected; and, perhaps, the well-known instance of Colonel Gardner's mare, and others of that class, will go far to support this supposition; however this may be, the investigation of these abnormal conditions *is invested with a deep interest*, not only as an important pathological enquiry, but as conducive to the adaptation of measures calculated to be beneficial to both mother and child; besides, by studying nature in her imperfections and irregularities, we are more likely to arrive at some knowledge of her laws than if we regarded her only in her healthy condition; by learning what she can dispense with, we ascertain those organs essential to existence; and by tracing her deviations from her common course, we may, perhaps, be led to a more correct acquaintance with her mode of acting; and this is also referrible to the vegetable kingdom; for, as the Rev. J. Henslow, in his lectures on botany, says, "by an accurate examination of *monstrosities*, as all deviations from the ordinary conditions of vegetables are termed, it has been clearly ascertained that the organs of reproduction and nutrition are only modifications of some one common germ, which may be developed, according to circumstances, either in the form of a flower bud or a leaf bud." Some of these monstrosities are caused by inflammatory action, as 271, E.; some from adhesion of germs in the very early stage, as 295, 309; others, as 276, later in intra-uterine life, or (perhaps, the Siamese twins would be a better example of this); others from irregular vascular excitement, one side being more developed than another, as 286; others by an arrest in development; and as this is so frequent, perhaps the following diagram may assist in elucidating it.



“ Let the verticle line represent the progressive change of type observed in the development of the fœtus, commencing from below, the fœtus of the fish only advances to the stage F, but it there undergoes a certain change in its progress towards maturity, which is represented by the horizontal line, F. D. The fœtus of the Reptile passes through the condition which is characteristic of the FŒTAL Fish, and then, stopping short at the grade R, it changes to the perfect reptile; the same principle applies to birds and mammalia, so that A,B,C, the ADULT of the higher groups, are seen to be very different from the Fœtal, and still more from the adult form of the lower, whilst between the Embryonic forms of all classes, there is at certain periods a very close correspondence arising from the law of gradual progress from a general to a special condition, as the human Embryo passes through all the successive characters peculiar to the fish, reptile, bird and mammiferous animals; it is no wonder (if an arrest takes place in its development) to find it presenting the characters of the animal through whose gradation it was passing at the time of its arrest. Those of the circulatory are well known, as the *foramen ovale remaining open*, causing *Cyanosis* or blue disease, which is the result of imperfect arteriolisation, and the individual is reduced, as far as the vascular system is concerned, to the condition of the crocodile. A still greater arrest, in the development of the circulatory system, has been occasionally evinced, by the heart presenting only two cavities,—an auricle and a ventricle, and thus corresponding with that of the fish; and these children have lived for seven or eight days, the functions apparently being but little disturbed (a fact which should be well known by the Medical Jurisprudist), or the heart at its apex may retain the bifid character it presents in early life (see preparation 19) which is permanent in the Dugong, this evidently resulting from an arrest in development; the same may be said of the nervous system: and to trace the different additions to the brain of the human germ through the several stages of its development, till the citadel of the soul is finally erected, is a most interesting subject; for the fully developed brain is not essential unto life, as we know by many of the Acephalous monsters living for days after birth. Monsters, or rather irregularities in the development of the human and other germs, may be arranged according to the simple order of Buffon; first, into those in which there is a deficiency of parts; secondly, those which are redundant in organs; thirdly, where the parts are misshapen; and fourthly, where, although the parts may be naturally formed, they are misplaced. This is perhaps the most rare, but there are many cases on record of the heart being on the right side, and the viscera being transposed, without interfering with the healthy functions of the system. There is an interesting case recorded by Baillie, in the Philosophical Transactions, vol. LXXVIII. Of *parts misshapen* there are many specimens, 281, 272. *Redundancy of parts*, 293. But *deficiency of parts* is the malformation most commonly met with, as single harelip, 277; Spina bifida, C.—; and Acephaloid children, 275, 278. The affections to which the fœtus is liable, vary not a little, according to the period of its existence at which we consider it; during the early periods, when the formative process is in most active operation, and the development of the different organs is proceeding rapidly, many important and remarkable organic alterations take place, by arrest of development, alterations in the structure of the ovum, from inflammation, &c. ; but those affections to which belong more strictly the name of disease, affect the more mature fœtus, whose organization approaches more closely to that of the new born child. To the Anatomist, Physiologist, Pathologist, and Practitioner, the subject of Monstrosity should afford great interest :—to the *Anatomist* and *Physiologist*, because, as Teidmann observes, " he can gain a knowledge of the history of the formation of the animal body, and the laws which preside over its formation (which knowledge alone ranks Anatomy as a science), *only* by the anatomy of the inferior Animals, and of the Fœtus in its normal and abnormal state ; for this alone unveils the curious facts of the gradual multiplication of organs, of their development, and progressive complication, and of their degree of importance in relation to life. And Mekel says that " Original Malformations are more interesting than most of the changes in Structure and Deviations in Form, which take place during life ;" and that this subject " has a scientific tendency," and " a great influence over other studies."—To the *Pathologist*, likewise, it often affords a clue in ascertaining the difference between Normal and Abnormal Structures ; and may sometimes afford important hints as to the Origin of Structures, that might, by being developed in after life, so derange the system as to cause death ; or even the knowledge of Arrest in Development may account for a complication of events that might eventually lead to death. Dr. Hodgkin says that—" these *Lusæ Naturæ* possess an interest immediately connected with practice," either to supply artificial aid to nature (as in cases of hare-lip, cleft palate, &c.) ; or a knowledge of Malformation may often intimate to us when we should not dare to interfere with her; for it is well known, that in attempting to remove Encephalic tumours, unfortunately inflammation generally ensues, and the patient dies; as in the case related by Lallemand. In Dr. Watson's Obstetric Museum, Liverpool, there are two specimens of Aborted Fœtuses; they were brothers, but born at an interval of eighteen months. In each of these specimens was a small tumour, situated at the root of the nose; exactly under the nasal process of the frontal bone, and was *like a wen*; but, on dissection, it was found to be formed by a portion of the interior lobes of the brain. A similar case occurred at the Hotel Dieu, at Paris. The mention of tumours occurring in the same place in brothers, conceived at different intervals, might suggest the idea that the Uterus, having once taken upon itself a certain erratic action, might retain it; as we know, when once it is predisposed to abort, it generally does so about the same period of utero gestation; but however this may be, there are many cases on record in which we cannot but be led to suppose that the strong and habitual mental impression upon the imagination of the mother, must have influenced the development of her offspring; and Dr. A. Combe says—"if a fit of passion, in a nurse, vitiates the quality of the milk to such a degree as to cause colic and indigestion (or even death) in a sucking infant, is it unreasonable to suppose that it (or any other strong feeling) should be yet stronger when the infant lies in its mother's womb?" and that much practical advantage would result to both parent and child, were the conditions and extent of its operations better understood." Malformations may also arise from the consequences of inflammation, or disease transmitted through or from the mother. And a late Author on "Hereditary Disease," affirms that most of our diseases come from her. To suggest the best means to remedy, and those most likely to prevent the exposure of the influence likely to affect the welfare of her unborn offspring, or of her own system; and to remove their effects, when formed, by proper remedial means, is the part allotted to the Medical Practitioner; to be able to accomplish this, he must, however, be acquainted with their origin, if he can; and as society at large, and unborn generations depend on the healthy condition of the rising race, it is a duty on every practitioner to suggest the best preventive, as well as remedial agents. (On this subject, see Montgomery on Pregnancy, &c.)

E. 271.—Monster malformation of the head. Placenta and membranes attached to the forehead. This is a good specimen of the effects of placentitis, which, most probably, caused this adhesion, and, consequently, deformity of the fœtus. The existence of morbid adhesion of the embryo to the placenta, or membranes of the ovum, has been considered as causing monstrosities, particularly of strong marked malformations of the head and face, and of defective conjunctions in the median line of the body, and of extroversions of the encephalic, thoracic, and abdominal viscera. Although such adhesions were not observed at the time of birth, owing to the tender bands (such as we see in the present specimen) having been in some instances ruptured in the act of parturition; and in others destroyed during the course of intra-uterine life. The solution of continuity, which they had caused on the body of the fœtus, having become before birth, more or less, completely cicatrised and obliterated, as we know takes place on the stumps of limbs severed off in utero, by bands of organized lymph (see Montgomery on spontaneous amputation); indeed, there is a complete sulcus formed in the right cervical region of this child, which caused deformity of the side. Paul Portal, 1685. Geoffrey St. Hiliar. There is a specimen in the museum of Guy's Hospital.

E. 272.—A Child with malformation of the fingers on the left hand. On the right there is one deficient; there is also a peculiar state of the prepuce, otherwise it is apparently well-formed and largely developed.

E. 273.—Acephalous Monster.

E. 274.—Congenital dropsy offering difficulty to the birth of the child. The vertibral column has been removed to show the intestines, kidneys, vessels, &c.; and their anterior covering seems to be the posterior wall to the cavity which contained the fluid, and, most probably, this cavity communicated with the cord. The child was born alive, and lived five or six days.

E. 275.—Acephalous female Fœtus, dissected and injected to show the internal viscera. The heart is large. In this specimen there is a total want of the bones of the sides and upper part of the cranium, as well as of the brain and the membranes ordinarily covering it; the basis cranii is ill-shaped and covered by a membrane continuous with the integuments; there is no fore. head, the skull runs backwards from the superciliary ridge, the eye-lids are perfect, the superior constituting the highest part in the head, the eye balls are perfect, but most of the muscles and the upper parts of the orbit are absent; the child is large. and lived a few hours after birth, which shows that the brain is not essential to the existence of life.

E. 276.—This jar contains two Fœtuses, with but one thoracic and one abdominal cavity; at birth they were joined anteriorly as well as posteriorly; but to exhibit their internal organs, a small section has been made, when there was found, on being opened, two thymus glands, one lung to each, two auricles, two ventricles (joined in the mesial line) with their valves, and from each of which respectively, at opposite sides, branch off separate aortas, &c., &c. There is but one pericardium, and one diaphragm; one cord, with two arteries and a vein; two livers, two distinct stomachs, and two distinct spleens; but the two duodeni join, and form a single intestinal tube till near the cœcum, where the intestine again bifurcates, and forms two separate cœca with their appendages and rectum. There are also two perfect and distinct male uro-genital systems. The testicles lie above the ring. The extremities, head, neck, and entire osseous system are distinct and perfect, except that the sternum of the opposite sides meet. One Fœtus is about an inch and a half shorter than the other, the length of which measures 15½ inches; the circumference of each head 11½, their joint circumference 17; round each shoulder 10, joint circumference of shoulders 13½. A case something nearly similar to the above occurred in Carlow, the length of each was 19 inches; circumference of head 14, joint 20; breadth of each shoulder 6½, joint circumference 17. In order to effect delivery of the heads, in the latter case, it became necessary to perforate one of them. The breech presented in both cases. The mother did well.

Mr. F. Elkington.

E. 277.—An Acephalous Monster. The spinal column has been opened for some distance to show the deficiency of its posterior wall; the spinal marrow was absent in this case. There is also hare-lip and fissure of the palate, caused by an arrest or non-union of the sides of the early embryo.

E. 278.—Acephalous Monster, with the heart and some of the abdominal viscera external. Some of the cranial nerves are seen passing through the foramina, in the base of the skull. This Placenta adhered to the intestines of the child, a portion of which still adheres to them. Professor Suret of Berlin, (Dublin Medical Transactions, New Series, Vol. I.) has described several cases in which the Fœtal membranes were attached to the abdomen of different animals, and he has delineated three instances of it in his plates; in all these cases the spines and bodies of the animals were much contorted, as is generally the case with this kind of malformation in the human subject, it is so in the present case, and most probably the specimen in the next preparation was caused by the adhesion of the Placenta. I put up last season in the museum of the

Liverpool Medical Institution a peculiarly interesting preparation of a human Placenta adhering to the abdomen of the child, the cord was about ten inches long.

E. 279.—Skeleton of a Fœtal Monster.

E. 280.—A curious specimen, showing imperfect development of the Abdominal Parieties, with protrusion of the Viscera. The vertebral column is much deformed, with the fore-part of the inferior extremities twisted backwards. See last preparation.

E. 281.—A seven months' Fœtus, with its secundines, showing malformation of the hands.

E. 282.—A very rare specimen of a Human Monster, with hernia, malformation of the hand, &c. There is a knot on the cord which is much dilated, above and below it; just at the umbilicus it is very nearly impervious, it is so constricted.

E. 283.—Acephalous Monster, showing thoracic viscera. This fœtus is much more perfectly developed than the others already enumerated; the lower part is contained in jar A., 9.

Presented by Mr. F. Elkington.

E. 284.—Fœtus, with a large cyst at the back of the head, communicating with the cerebral cavity; the tumour greatly impeded labour. As tumours of a very different character are frequently observed on the fœtal head at birth, it is of consequence to be satisfied of the diagnostic characters of the different tumours. In this case the tumour was globular, tapering to a neck where it issued from the back part of the head, where these tumours are most frequently situated. (See an excellent paper by Dr. Adams, in the *Dublin Medical Journal*, vol. ii.) At this point a circular aperture can be detected in the bone. The tumour was not painful; but by pressing it the child was much distressed, as under other circumstances of cerebral or spinal oppression; pulsations were felt in the tumour synchronous with those of the heart; the child lived a few days. A man is recorded to have lived 33 years with an encephaloid tumour in the forehead, without experiencing any disturbance of his intellectual faculties. I saw two interesting specimens of hernia cerebri, in Dr. Watson's Museum, Liverpool, in two brothers; they were early aborted; the tumour was prolonged, in both cases, through a slit in the centre of the ethmoid and sphenoid bones down to the root of the nose. This tumour consisted of brain, and was covered with the ordinary integuments of the scalp. As in most of these instances, the bony vault of the head is much smaller than in ordinary cases, being proportioned to the diminished quantity of its contents, and the satures and fontanelles are found closed. There is a case mentioned in the *London Medical and Physiological Journal*, of a tumour extending from the third cervical vertebra to the eighth rib, and containing a quart of fluid, which communicated with the ventricles of the brain, impeding labour for two hours.

E. 285.—A very fine specimen of a Cyclops Child, with a proboscis projecting over the eye, which is evidently a confusion of both eyes. In a perfectly similar case, when the proboscis was slit open, I found there was a cavity lined with mucous membrane; this rudimentary nose was attached to the cribreform plate of the ethmoid bone, on either side, the nasal twig of the opthalmic branch of the fifth pair of nerves was visible, running into the protuberance; underneath the nasal protuberance was a single opening, bounded by four small eyelids, provided with cilia, cartilages, &c.; and on the inner angle of each of the lower ones is a punctum lachrymale; the orbits by the absence of the os ethmoids are thrown into one cavity, in which there are muscles and nerves for two eyes; but no globes or optic nerves; no rudiments of either the olfactory or optic nerves could be discovered any where; the other organs of sense were natural. There was water in the brain. Hernia diaphragmatis and sternum, also serpernumary fingers. The child lived a day.

E. 286.—A Fœtus and Membranes, aborted at a very early period; it is preternaturally developed; the membranes are all seen, but the decidua is in a very indurated state.

E. 287.—Mole. Amorphous fœtal growth, with membranes and portion of placenta; it presented, during labour, at the full period, was mistaken for a polypus, obstructing the descent of the head, and was forcibly wrenched away, alarming hæmorrhage followed, but this soon ceased by the speedy descent of the head of a full-grown living child. There was but one placenta, the cord of the mole arising from the edge thereof, which was brought away, and is seen in the preparation. There is but one artery and one vein, which was formerly believed to have caused monstrosity. The chorion and amnion are well shown; the white spot on the chorion is the obliterated umbilical vesicle; the mass is enveloped in a tissue analogous to the skin; the cuticle is, in one or two parts, raised, it is covered with a fine fleecy hair; on the surface are two nipple-like substances—that to the right very distinct; probably rudimentary extremities. The smooth surface immediately below the attachment of the cord, was vascular, soft, and spongy, resembling the head of 277. There is a similar case related, and a drawing given by Dr. Bland in the 71st volume of *Phil. Trans.*, his case, also, it seems was a twin case, but came away on the third day; no suspicion was entertained that it was there as the placenta came away with the first child; its shape was spherical, was nourished by an umbilical cord, to which was attached a portion of membranes, no precise placenta for it was found; it was covered with a cuticle, and a little above the point where the navel-string terminated there was a hairy scalp, covering a bony prominence, something resembling the arch of the cranium, it was plentifully supplied with blood vessels from the cord, had a small brain and medulla spinalis continued into a bony theca, with nerves passing from thence through the foramina of the bones, but no resemblance to any thoracic viscera; the rest of the bulk was made up of fat.

E. 288.—Skeleton of a Human Monster. (See 279.) There was in Mr. Brooke's Museum, London, something similar, the lower extremity of whose body terminated in what resembled the tail of a fish.

E. 289.—A Human Fœtus, with its hand glued to the side of its head, by the deposit of lymph. See preparation 198. C.

E. 290.—Male Fœtus, with imperfectly developed external genitals. The penis is long, and is intimately attached to the perineum ; it has a deep fissured raphæ, giving it, at first sight, the appearance of the nymphæ. The orifice of the urethra is immediately below it, and passes directly into the bladder, forming hypospadias. The testicles lie in their usual place, in the lumbar region, and are distinctly seen. The preparation is dissected to show the relative position of the various parts. Behind the bladder is a projecting nipple ; its distinct character is not certain. This fœtus was prematurely thrown off after repeated hæmorrhage from placenta previa : the placenta itself was straggling and irregular, and filled with cysts of various sizes, each containing a clear fluid.

Hospital case, Mr. Figgins.

E. 291.—Cast of a singular case of Hermaphroditism, the following is an abridged history.

" I have examined and attentively considered the case of Gottlieb Gottlich, a native of Saxony, exhibited in this place to many professional men; I consider his case as an extremely interesting one, anatomically and physiologically exhibiting hermaphroditical appearances, such as I long ago proved to *exist in every fœtus of a certain age*. The case, then, is one of a retardation in the genital organs, or rather of a persistance of a fœtal condition of the organs of the adult state, increasing in bulk with the general growth of the body, but accidentally failing to undergo those changes, both of form and condition, and of number, by the disappearance of one set, changes uniformly required, when the sex is to be properly characterised. I consider the case, then, as a proof of the accuracy of the theory of the types of organs, which some years ago I attempted to substitute for the general continental doctrine of analogies. The extent to which the female organs are present, can only be conjectured. But the presence of some remains of the uterus, would neither be unexpected nor extremely unusual, since hermaphroditical appearances, equally extensive, have been found in animals, as highly organised as man. A preparation of this kind is in my own Museum.

" The memoirs to which I have alluded as explanatory of the genital organs of Gottlieb Gottlich, were read to the Royal Society of Edinburgh, in 1828.

" R. Knox, F.R.S.E., Lecturer on Anatomy, Fellow of the College of Surgeons, Doctor of Medicine, &c."

" The voice and features were those of a man, and the height apparently about five feet four inches. A light downy beard covered the upper lip; the mammæ were not developed, and the chest was destitute of hair.

" On examining the organs of generation, no penis was to be seen, but the scrotum was discovered, divided along the median line, the two halves resembling the external labia of the female, somewhat pendulous, and each containing a testis. The part corresponding to the mons veneris was not very well developed, and was moderately supplied with hair. On separating the halves of the scrotum, or labia externa, the glans penis came into view, resembling a large clitoris, and in the nutural situation of the latter organ. It was covered with a prepuce, and had a fissure below, which was imperforate. About an inch lower down, and near half-an-inch to each side of the raphæ, were two very small orifices, resembling abrasions of the membrane, and hardly admitting the point of a probe.

" Still lower down was situated the entrance of a pretty capacious canal, protected at its lower end by a fleshy bridal, somewhat of a semilunar form, which divided it from the perineum. This canal was about three inches long, and terminated in a cul de sac, excepting that, at the further end there was another orifice, through which, when he was desired to make water, the urine flowed. The right scrotal half (or labium) contained a reducible hernia, for which he was operated on by Professor Bach, at

Dresden, three years ago, when it first appeared; and one year after that, by Professor Blumenbach, at Gottingen. The testes descended for the first time along with the hernia.

"The cicatrix left by the operation is still visible on the right and left labium, and he wears a double truss. He has pretty strong sexual desires, and says that he can perform in either character.

"He has nocturnal emissions, and emissions also on libidinous ideas, being excited with regard to either sex, the semen flowing from the small orifices below the clitoris, or glans penis. There was never any discharge resembling the catamenia.

"This individual, as Doctor Sillar explained to the gentlemen in attendance, belongs to the fourth class of Sir Everard Home's division (Phil. Trans., 1799), viz. where there exists a real mixture of the organs of both sexes, although not sufficiently complete to constitute the double organ."

Liverpool Medical Journal.

E. 292.—Cast of the genital organs of the same individual as the preceding, with the parts more fully exposed.

E. 293.—Hand of an infant, with additional little finger attached by a pedicle. In most cases it is easy to cut these off, but there is a case related by Mr. White, in his work on the regeneration of animal and vegetable substances, of a fine boy who had two thumbs on one hand, and that as often as one was cut off it grew again, and a fresh nail was formed, even though it was dissected out at the very joint.

E. 294.—Pig's Foot, with supernumary toes.

E. 295.—Fœtal Pig, with a double body, dissected. It has one head, one heart, with lungs corresponding, the liver having the appearance of two united. There appears to be but one kidney to each; there are two perfect genital systems, both male.

E. 296.—Another specimen of the same kind, at a more advanced stage.

E. 297.—A dissected skeleton of a double-bodied Pig.

E. 298.—A Pig with a proboscis nose, and the internal organs exhibited.

E. 299.—Malformation in the head of a Dog; the lower jaw deficient.

E. 300.—Double Kitten, analogous in development to fœtal pig, 295.

E. 301.—Head of a Kitten, malformed: two eyes on the left side, lower jaw deficient, oral aperture, the ears open along the eustachian tube.

E. 302.—A cyclops Kitten, the eye situated between the ears, and occupying the whole of the face; nose and mouth deficient.

E. 303.—A Kitten with six legs.

E. 304.—A Kitten with eight legs.

E. 305.—A Preparation similar to 304.

E. 306.—A Kitten with a double face.

E. 307.—A blighted Fœtus, and flattened in the womb.

E. 308.—Two eggs united by a connecting stalk, which, in common with the two eggs, is covered by a tough membrane; a coalescing of two germs in this manner is the way in which Anatomists explain such cases as one brother being found inside another, &c.

E. 309.—

E. 310.—One of the two Eggs which were united Siamese-fashion. See some observations in the Cyclopædia of Anatomy and Physiology; article, "Fœtus."

E. 311.—

E. 312.—A Chicken with a third leg placed between two anal orifices; there are also three cœcal appendages.

E. 313.—A Chicken with four legs.

E. 314.—A double Chicken with one head.

E. 315.—A double Duck with one head.

E. 316.—A Gosling with four legs.

E. 317.—Chicken, with two additional legs appended to the pelvic bones. I had one of these in my possession, and it lived for one year, was healthy and very large, but died suddenly: no *post mortem* made.

PART VI.

F.

This Section consists of Preparations of Infantile and General Pathology; and also of Preparations of Normal Anatomy.

F. 318.—Aneurism of the ascending portion of the arch of the Aorta, the size of a very large orange; it communicates with the artery, midway between the valves of the heart, which are very patulous; and the roots of the large vessels, which are partially included by a circular opening, about the size of a crown piece, and marked by a smooth and rounded margin; the three coats appear to be continued into the sac, which is filled with a firm laminated coagula, in close contact with the sac; but in the centre fluid blood existed; it is intimately adherent to the lung.
Mr. Francis Elkington.

F. 319.—Large Aneurism, the size of an orange, at the junction of the abdominal and thoracic aorta. The sac is thick, and its inner surface rough; it possesses three coats, and communicates with the artery by a longitudinal aperture, about two inches in length; the callibre of the artery, in the neighbourhood, is somewhat dilated.

F. 320.—Foramen Ovale, open in a female patient, aged 18. This patient laboured under that malady called cyanosis or the blue disease. *Mr. F. Elkington.*

F. 321.—Disease—ossification of the mitral valcs, producing a rigid crescent form of the opening; it is in the heart of a young woman, who died at the age of 24; she had suffered from affection of the heart for eight years; the probable cause—incessant work as a milliner's apprentice, and late hours, combined with deep grief at leaving her parents and native place. Both lungs in this case free from disease, except a marked and remarkable toughness and elasticity, owing to increased growth of the elastic circular fibres of the bronchi; the substance dark, solid, and congested. *Mr. Figgins's Hospital case.*

F. 322.—This is a beautiful specimen of chronic diseased Lung in the human subject; it presents numerous cavities, which communicate with the air-cells. There is also an extremely thickened state of the pleura pulmonalis and costales, as also of the other tissues in the lung.

F. 323.—Ductus arteriosus open in the third year.

F. 324.—Miliary Tubercles in a child 15 months old; they were few and scattered, varying in size, from a pin's head to that of a small pea; some were softened, the largest in a state of suppuration. These tubercles appeared evident on the surface; internally a great portion of the lung was healthy. In this case the mesentric glands also were enlarged. The child died in about two months from the commencement of its illness, which originated in an attack of measles, complicated with pneumonia; an obstinate cough remained during the latter part of its life; it died much emaciated.

Presented by Mr. Elkington.

F. 325.—This preparation exhibits the Tubercles in a more advanced state than the last, but, still, in a crude state, they are of a yellowish white colour, and vary to about the size of a pea, they are placed at some intervals from each other, so that the new deposit is seen to great advantage dotting the parenchema of the organ. Taken from a child seven years old, who died of acute pleuritis. The tubercle pervaded equally both lungs.

F. 326.—An excellent specimen of Vesicular Emphysema, taken from the upper part of the right lung, preserved in spirits. The surface is thickly studded with vesicles of all sizes, from that of a pin's head to that of a large bead; a section has also been made of the lung to show how the vesicles occur in its substance This lung did not collapse, and bears a strong resemblance to that of some reptiles.

Mr. G. Elkington.

F. 327.—This jar contains a most beautiful dissection of the Cervical and Thoracic Glands, by the late Dr. Hue Ley, to demonstrate his view of laryngismus stridulous (the child crowing of Dr. Gooch) which, till very lately, was considered to depend upon cerebral disorder or disease. He attributes the temporary closure of the glottis to pressure, made by enlarged glands, in the neck or chest upon the recurrent nerve, or on some part of the right, subverting the exact antagonism, by which the glottis is automically and involuntarily kept open, and allowing its margin to come together, and to occasion the peculiar kind of inspiration so much like that of croup; Dr. Hue Ley thinks this affection more allied to paralysis than to convulsive movement. Advocating the connection of child crowing with tumefaction of the glands, in the neck and chest, and with the enlargement of pneumogastric nerve or its branches; among these glands, "scarcely an instance, says he, has occurred to me since my attention has been very much directed to the subject, in which there has not been the strongest foundation for the belief, that either the glandulæ concatenatæ of the neck, or the thoracic absorbent glands had become morbidly enlarged."

F. 328.—A beautiful dissection of the Bronchial and Cervical Glands, by Dr. Hue Ley, to demonstrate his views of spasmodic croup. (Thymic asthma of the Germans). This dissection is similar to the last, which see; only on an older subject, and in whom the glands are more enlarged.

F. 329.—Larynx Trachea and Bronchial Tubes of an adult, from the lip of the epiglottis to the bifurcation of the bronchial tubes; the passages are lined by inspissated lymph, the result of inflammation. Parts of this adventitious deposit have fallen to the bottom of the jar in which this preparation is suspended. Taken from a patient in the seventh month of pregnancy.

F. 330.—The Larynx and Trachea of a child, on the mucous membrane of which there is a copious effusion of lymph, the result of croup. *Presented by Mr. G. Elkington.*

F. 331.—Larynx of a healthy child, about seventeen months old, who died suddenly from the impaction of a foreign body in the glottis. The death of the child was at first attributed to an excess of feeling, but on a minute examination being made, there was found an "iron screw," about an inch and a half in length, being a little bent or curved, occupying the whole of the glottis, and extending some way down the larynx; it was with difficulty drawn out. The extremities, head, and neck were greatly congested. *Mr. Elkington.*

F. 332.—Odema of glottis, &c.

F. 333.—Inflammatory and Ulcerated state of the Cœcum, and appendix with tubercles around the tube.

F. 334.—A piece of Omentum containing several firm circumscribed tumours. A section which has been made of one of them shows its structure. The Omentum appears quite reticular. Taken from the same patient as preparation 470.

F. 335.—A beautifully injected portion of Intestine, affected with melanosis on its internal surface. The mucous lining is ulcerated in many parts. *Mr. F. Elkington.*

F. 336—A most interesting case of Tubular Polypus, from the rectum of a child, aged fourteen months. He had been ill for three months, constantly troubled with diarrhœa, and very frequently vomiting, which was supposed to arise from teething. When medical advice was solicited, the child was pale and restless, constantly vomiting and straining, the pulse was quick and feeble; after the lapse of a few days, there was found three inches of the intestine down, and the whole of the polypus external; now the child vomited frequently, was constantly straining, and each effort forced down more of the intestine; he was very feeble. The only chance of saving the child appeared to be the removal of the polypus; a ligature was tied round it, and then cut off near its base, and the intestine returned. The child was immediately relieved, and in less than a week was convalescent. *Presented by Mr. Elkington.*

F. 337.—A portion of the Colon of a child, showing the effects of dysentery, the coats are all thickened, the mucous membrane was much congested, and covered with broad thick patches, separated by irregular furrows, giving to the surface somewhat the appearance of a pavement. In two preparations in the Liverpool Pathological Museum, the mucous membrane seems as if "exfoliated," see G. 480, 484; and in some parts of this specimen, when recent, the mucous membrane is half an inch thick.

F. 338.—A portion of the Jejunum, with the Mesentry, which were covered with small yellowish-white tubercles, particularly abundant on the small intestines, and more especially in spots corresponding to ulcers of the mucous membrane; the intermediate portions of the intestine were quite attenuated, and in a few spots the peritoneum alone preserved the integrity of the intestine.

F. 339.—A piece of small Intestine, from a girl; and oblong patch of Peyer's glands, is hypertrophied, and has taken on an ulcerative process at one extremity, and has perforated the tubes.

F. 340.—A well-marked specimen of disease of the Glandulæ Peyerii. A patch is exhibited, nearly two inches long; it is elevated and granular, but free from ulceration.

F. 341.—A beautiful specimen of enlarged Glandulæ Solitariæ, or Brunneri, from a child who died of scarletina.

F. 342.—Two Worms, passed from the rectum by a young boy.
Dr. Waddy.

F. 343.—A Worm, Taenia Solium, passed by a young boy, (See also A. 83,) measuring about 10 feet.

Mr. Mackay.

F. 344.—

F. 345.—Fluke (Distoma Hepaticum).

F. 346.—A very large Hydatid, taken from the liver of a hog. See also A. 85, 93.

F. 347.—Human Kidney.

F. 348.—Human Kidney.

F. 349.—Human Kidney

F. 350.—Sections of Calculi.

F. 351.—Fungus Hæmatodes of human Testicle.

F. 352.—Encysted Testicle, with enlarged epididymis.

F. 353.—Portion of Skin minutely injected.

F. 354.—Diseased Prostate.

F. 355.—Diseased Prostate.

F. 356 —Bloody extravasation into the Brain.

F. 357.—Bloody extravesation into the Brain.

F. 358.—Bladder, vesiculæ seminalæs, &c., in a male child.

F. 359.—Tumour from the Cervical region.

F. 360.—Fungus Hæmatodes of the Knee.

B. Brodie.

F. 361.—Diseased Bones. A. B. C. D. E. F.

F. 362.-—Diseased Foot.—Cast.

F. 363.—Rickety Patient.

F. 364.—Double Rib.

F. 365.—Larynx, in spirit.

F. 366.—Larynx, dry.

F. 367.—Tongue, Larynx, &c.

F. 368.—Blow-hole of a Porpoise.

F. 369.—Eye.—*Horse.*

F. 370.—Eye.—*Child.*

F. 371.—Eye.—*Human.*

F. 372.—Human Intestine

F. 373.—Intestine of a Turtle.

F. 374.—Human Spleen.

F. 375.—Human Ilio cæcal Valve, &c., injected.

F. 376.—Injected Child.

F. 377.—Human Female Trunk.

F. 378.—Injected Human Arm.

F. 379.—Injected Veins in human Arm.

F. 380.—Injected Horse's Foot.

F. 381.—Spine and Pelvis.

F. 382.—Section of ditto.

F. 383.—Pelvis.

F. 384.—Pelvis.

F. 385.—Pelvis.

F. 386.—Pelvis.

F. 387.—Pelvis.

F. 388.—Pelvis.

F. 389.—Pelvis.

F. 390.—Pelvis.

F. 391.—Head of a Child.

F. 392.—Skeleton of a Fœtus. *Mr. G. Elkington.*

F. 393.—Pelvis of a Fœtal Calf.

F. 394.—Pelvis of a Female Dog.

F. 395.—Pelvis of a Bird.

F. 396.—Human Skeleton.

F. 397.—Fœtal Head, showing the optic nerves and the growth of the teeth.

F. 398.—Growth of teeth.

F. 399.—Injected Thorax of a child, to show its vascularity; the pleura has been dissected off.

PART VII.

G.

This Section contains Preparations and Casts, to illustrate the Pathology and Diseases of the Uterus and its Appendages in the Unimpregnated and Gravid state; and also of the External Organs of Generation: to which are added, Pelves, Diseased from Rickets, Malacosteon, &c.; and Diagrams of *Morbid Apertures*; cut in wood.

G. 400.—Rupture of the Uterus. In this case there are two lacerations—one situated on the left side of the organ, inclining anteriorly, and extending from the lower margin of the broad ligament to near the conjunction of the vagina, with the os uteri. The edges are rough, and widely separated from each other, and sufficiently large to admit the fœtus into the abdominal cavity. The second laceration is situated at the posterior part of the cervix, a little above the point at which the peritoneum is reflected from the rectum.

G. 401.—Uterus Ruptured during Labour. The laceration runs transversely across the anterior part of the cervix, near its junction with the vagina. The edges are separated to a considerable extent, and present a rough jagged appearance. The rent is very irregular, and runs in such a manner as to circumscribe a large triangular flap of the uterine wall. The peritoneal coat, in addition to being simply torn across, is peeled off the surrounding surface to a considerable extent, so as to denude the proper tissue of the organ.

G. 402.—The Uterus of a Woman, who died soon after delivery. She had previously, and during pregnancy suffered much from uterine irritation, which was supposad to have originated from disease communicated by her husband, who led a very dissolute life. Her labour was long and severe ; the os uteri, for a long time, not appearing to relax from any of the remedies resorted to. The child, after a great deal of care and trouble, was brought away ; but, from the time of its birth, she sank rapidly. On an examination being made after death, there was found a hardened and degenerated state of the os uteri and surrounding part; there was also a rent through the anterior wall of the uterus, but confined to its muscular tissue ; for the peritoneum was not lacerated. There are small tubercles developed in the walls of this uterus : and in the right ovary is a beautiful specimen of the corpus luteum, as it appears, at this period, after utero gestation. *Hospital case.*

G. 403.—Uterus Ruptured in Labour. The laceration is situated on the right side of the organ, a little anteriorly, extending from near the origin of the round ligament downwards as far as the upper extremity of the vagina, which canal is partly implicated. Small tubercles are seen developed in the walls of the organ, perhaps degenerating their tissue.

G. 404.—Uterus Ruptured in the act of Parturition. The laceration is situated on the posterior part of the cervix, a little above the part at which the peritoneum is reflected from the rectum. In this case, the rent is not very large, and does not seem to have paralysed the action of the uterus. It is through this part of the uterus, at its junction with the vagina, that laceration is observed most frequently to occur, and rather more frequently behind than before. In the 36 cases related in the *Edinburgh*

Medical and Surgical Journal, XLII., by Mr. Roberton, of Manchester—" In one, the cervix was separated from the vagina, except by a thread ; in eleven, the laceration was posterior ; in eight, it was anterior ; in five, lateral ; in three, anterior-lateral ; and in three, posterior-lateral." In the 34 cases which occurred in the Dublin Lying-in Hospital, and related by Dr. Collins—" In thirteen, the injury was at the posterior part ; in twelve, anteriorly ; in two, laterally ; in one, the mouth of the womb was torn ; and in six, the particular seat of the laceration was not described."

G. 405.—Uterus Ruptured anteriorly, near the cervix ; it has been beautifully injected.—Mary Ewen's case. See Medico Chirugical Transactions, Vol. XIII.

Dr. Bull's Collection.

G. 406.—Section from the anterior and left side of the Pregnant Uterus, showing two rents in its structure : in one place, at the fundus of the uterus ; externally and anteriorly the peritoneal coat only has been cracked, or torn, without any injury to the subjacent tissue, which peculiar species of partial rupture has been noticed by Drs. Clark, Collins, &c., &c., and when uncomplicated, does not impede labour ; whereas, in the second place, the rent is confined entirely to the tissue of the uterus itself ; and the external peritoneal coat has not given way. Thus, in nine of the 34 cases recorded by Dr. Collins—(see preceding preparation)—the peritoneal coat was uninjured, although the muscular substance of the cervix was extensively ruptured. Similar cases to this occur oftener than is supposed, and the patient recovers perfectly. Sometimes the operation of cutting the cervix, when indurated, is resorted to, as recommended by Dr. Ashwell, and adopted by Mr. F. Elkington, as recorded in his report of Midwifery Cases. In this preparation, the muscular structure of the round ligament is well seen.

G. 407.—This is a very interesting specimen of a rare and singular species of Laceration of the Os Uteri during Labour ; of which only two cases are recorded—one by Mr. P. N. Scott, of

Norwich, from whose patient the present preparation was procured; the other by Dr. Rigby. In Mr. Scott's case, reported in the *Med. Chiru. Trans.*, *Vol. XI.*, and referred to by Dr. Merriman, the laceration took place during a violent pain, when the patient felt something snap, the noise of which, one of the attendants declared she heard. In the other case, the patient was not aware of anything peculiar having happened, "but on the bed lay a disc of fibrous matter, with a circular hole in the middle ; in fact, the os uteri separated from the uterus to the extent of near half-an-inch, the edge of the laceration being as clean and smooth as if it had been carefully cut off by a knife." In both cases the os uteri presented a degree of unnatural rigidity which was peculiar, and defied all treatment; however, in both instances the patient recovered.

G. 408.—In the case of this lady, after the child was born, the presence of tubercles was discovered in the walls of the uterus. The placenta was also found adherent: but this, with caution, was removed; however, she died; and at the *post-mortem examination*, one tubercle at the upper and anterior part of the organ, was found softened down, and two ounces of matter let out.

G. 409.—The Uterus of a Woman, who died sometime after delivery, from a continual dripping Hemorrhage. The vagina is in a very relaxed state, "like wash-leather;" it has been opened posteriorly. The bladder and the meatus urinarius has a quill fastened into it.

G. 410.—Uterus of a patient who died of Uterine Hemorrhage, showing its relaxed condition, and patulous state of the uterine vessels, on its inner surface; on its right side, near its fundus, there is a peculiar state of the mucous membrane (see Hunter's Plates, figures, 10, 18); small fibrous tubercles seem also to have been generated in the tissue of the organ.

G. 411.—The Os Uteri of a patient, who died undelivered, from a rigid and undilatable os uteri, caused, most probably, either from a spasmodic contraction of its circular fibres, or from irregularity, or deficiency in the contractions of the longitudinal fibres of the whole organ. The whole os appears thick and firm, presenting nothing of the elastic cushionery softness in this part, in a favourable state for dilatation; a small bunch of silk has been passed through the os to show that no adhesions have taken place; viewed from its internal surface, the arborescent appearance of the neck is still visible.

G. 412.—Rupture of the Vagina after parturition.
Dr. Merryman's case; see his Synopsis.

G. 413.—The Uterus of a Woman a short time after delivery. The uterus is large, and its inner surface rugged, and dark coloured at its upper and posterior surface; on the other part, particularly inferiorly, and to the left side, the decidual surface has the appearance of those little cups so well seen in preparation B. 118. The left ovary seems much atrophied.
Dr. Bull's Collection.

G. 414.—Uterus of a Woman shortly after delivery; a section has been made through its posterior wall, and portions of the placenta adhering to it are clearly see, bristles have been passed into some of them. A section also has been made through an agglutinated part, and, certainly, the firm full light colour, &c., might warrant the conclusion, that some inflammatory action had caused adhesion between the placental mass and the opposite surface of the anterior wall. The right ovary is much altered, and has taken on a cysted character; in the left is seen the corpus luteum, although the surrounding parenchema is much softened, to the outward covering of which the fallopian tube is adherent.

G. 415.—Uterus of a Woman a short time after delivery; a portion of the anterior wall of the uterus has been removed to show its cavity, the surface of which is still ragged, particularly superiorly and posteriorly. The corpus luteum is beautifully seen in the left ovary: no history of the case—not well authenticated—supposed to have died from hœmorrhage after premature labour. *Dr. Bull's collection.*

G. 416.—The Uterus and Appendages of a Woman, aged 22, and mother of three children, who died four weeks after her confinement, from the prostration caused by a continual hœmorrhage ; she was admitted an out-door patient of the Hospital three days before her death, and when first visited, and examined per vaginam, the os uteri was found sufficiently open to allow the finger to pass through it, and a small substance could be just touched, but its precise nature, however, not ascertained. On a *post-mortem* being made, the viscera, generally, were blanched, the uterus particularly pale ; and on cutting it open there was found a portion of the placenta adhering to the fundus and side, nearly as large as the top of a wine-glass, and the mucous and submucous tissue of the organ much altered. In this case, though the discharge was constant after her confinement, and, at times, escaping in gushes, with large coagula mixed in it ; still, she was apparently getting on well till the day before her application, when a violent fit of passion so accelerated the complaint, that she never after rallied ; for the two days previous to her death the discharge was nearly colourless, like the serum of blood, and very copious. This woman had two severe falls during her pregnancy ; once she fell upon the abdomen, which, most probably, produced some leasion or inflammatory process to take place between the placental and uterine surfaces. The corpus luteum is well seen in the right ovary.

Mr. Francis Elkington.

G. 417.—The Uterus of a Woman some time after delivery ; a section of the posterior wall of the organ has been removed to show a portion of placenta adhering to its upper and anterior surface ; the shreddy ends of the placental vessels, which are freed from the surrounding coagula, are beautifully seen ; also, nearer its fundus, close to the opening of the uterine extremity of the fallopian tube, where a portion of the placenta has been cut from its adhesion to the uterus, the open mouths of the severed vessels are clearly visible.

G. 418.—The upper and right lateral portion of the Human Gravid Uterus, with the placenta attached to its walls.

Dr. Bull's collection.

G. 419.—Human Uterus, greatly enlarged by a growth from its uterine surface, which was considered malignant. The utero vesical cul de sac has been obliterated by adhesion, and a communication exists between the cavity of the uterus and bladder; tumours exist in the parieties of the organ. There is one large tubercle just at the point where the anterior walls of the uterus have given way.

G. 420.—A section from the left side of a Human Uterus; the organ was greatly enlarged, and the whole muscular and mucous structure altered and changed by disease of a malignant character, except a very thin layer on its external surface, under the peritoneal coat, which latter was thickened in parts, and alone preserved the integrity of the organ. The fallopian tube has been preserved in this section.

G. 421.—Human Uterus enlarged, and its walls greatly thickened. Through the section made into its anterior wall, a large tumour, the size of a goose egg, becomes visible, which is adherent by a broad base to the anterior and right lateral wall of this organ; it has partially descended through the os into the vagina, which is considerably dilated; the tissue of that part of the tumour, presenting through the vagina, seems to have undergone a partial change, and the surface is superficially abraided.

G. 422.—Human Uterus, laid open to show a morbid growth situated near the orifice of the fallopian tube.

G. 423.—A Wax Model of a Polypus, growing from the neck of the Uterus, plugging up the os, and beginning to fill the vagina. The walls of the organ are thicker than usual; and both ovaries are in an abnormal condition.

G. 424.—Large Polypus of the Uterus, nearly the size of a child's head, which adheres to the internal surface of the body, and os tincæ of the uterus by a contracted neck. The tumour has passed through the external orifice, and by dragging down the uterus, has caused a partial prolapse; descending down to it are seen the fallopian tubes and ovaries, which are greatly enlarged. The bladder lies anteriorly and above the fundus of the uterus, which presses greatly against the urethral canal; the posterior outer covering of the tumour presents a superficially abraided surface, from being chafed, and the irritation has caused an enlargement of the nymphæ and surrounding parieties.

G. 425.—Wax Model of an enormous Polypus of the Uterus. The vagina is surprisingly dilated, and forms a great sack, which is completely filled by the tumour. The peritoneum is as much distended as it usually is during the passage of the child's head in labour. The external organs, from continued pressure, were in an inflammatory condition, and the tumour in a state of gangrene. *Dr. Bull's Collection.*

G. 426.—Wax Model of Inversion of the Uterus.

G. 427.—Casts taken from a Prolapsed Uterus, of long standing. The organ has descended so low as to have caused permanent and complete inversion of the vagina. The os uteri and surrounding surface have begun to ulcerate.

G. 428.—Another Cast, exhibiting procidentia of the Uterus and inversion of the Vagina, at its full extremity; the os uteri distinguishable—the surface is hard, and has taken on a hard cartilaginous character.

G. 429.—Prolapsus Uteri, in an earlier stage than the preceding ones.

G. 430.—In this preparation there is seen extensive ulceration, and destruction of the os uteri and upper part of the vagina; there is also a thickening of the upper part of the substance in this organ, and a deposit of new matter in the locality of the ovaries; there are also traces of previous inflammation having taken place; for the ovaries and fallopian tubes are glued together. The previous history of this case not recorded.

G. 431.—Cauliflower Excrescence of the Os Uteri. Mrs. —— aged 42, mother of four children, was attended from her first attack in March, to October, by different Medical Men, at which latter period she had a copious vaginal discharge, accompanied by dyspepsia and pain in the back; her menstrual periods were now more frequent than natural, and she lost more at each time; she occasionally had sudden and alarming floodings; at other times a constant watery discharge, which, towards the end of the month, was so considerable as to wet many napkins in the day; she also had great thirst and cough. On examination, her vagina was found nearly filled with a tumour of an irregular feel, insensible to the touch, and growing from the whole circumference of the os uteri; it had less of the granular feel than the cauliflower excrescence usually has, having a striated form, giving the idea of a bundle of vessels connected together. From this time she gradually got worse, each flooding leaving her weaker. During a fortnight before her death, which occurred on the 7th of December, she had almost constant vomiting. The *post mortem* showed effusion into the abdomen, and great paleness of the entire viscera; on an anterior section being made into the uterus and vagina, it was found that the os tincæ, cervix, and upper part of the vagina were involved in the disease, and the whole surface presented a remarkably ragged, flocculent, shreddy appearance; the different structures were in a softened and pulpy condition, so as to be readily perforated by mere pressure of the finger. The tumid appearance had greatly decreased, or shrunk, after death. In this preparation is also well seen, the peritoneal cul de sac, between the uterus and rectum, which latter viscus has been laid open to show its connection and valvular arrangement.
Mr. F. Elkington.

G. 432.—This preparation shows the Cervix Uteri, Vagina, and Rectum of a Monkey. This strange appearance of the os uteri appears to be nothing but a morbid hypertrophy of the peculiar internal, or mucous membrane of the neck of the uterus, similar to that in preparation, G. 408; and we know, from the indolent and artificial life of these naturally lascivious animals, that masturbation with them is almost an hourly or unceasing act; and so, by this constant irritation and excitement of the vagina and os uteri, cause this exuberant growth of the mucous lining. See also preparation of the uterus of a Monkey, A. —. May not this state of the mucous membrane be the first stage of some of those cases called cauliflower excrescence of the uterus? Dr. Simpson, in talking of the excrescences, says—" their total removal, under the use of astringent lotions, the healthy condition of the neighbouring tissues, and parts after death, often would lead to the opinion that it was not of a carcinomatous nature, though it may become the seat of carinomatous, or encephaloid deposit during its progress, whatever may be its nature at its first commencement."

G. 433.—Cancer of the Uterus. Both the os and a great part of the cervix have disappeared, together with the upper part of the vagina, they being completely destroyed by ulceration, a few ragged shreds only marking their former situation. The substance of the uterus is enlarged. There is extensive deposition of new matter in the vicinity of the broad ligaments, particularly on the anterior and right side, which, when cut into, fell, under the knife, like boiled udder. There are evidences of inflammation having previously occurred. The mucous membrane, lining the inner side of the uterus, is also in a diseased condition. The previous history was not recorded.

Dr. Bull's collection.

G. 434.—Extensive Cancerous Disease of the Vagina and Uterus; this organ, though slightly enlarged, appears fuller and rounder than natural. The os, cervix, and upper part of the vagina are entirely lost, and a cavity is formed; bounded in front by the posterior wall of the bladder (whose coats are involved); posteriorly, by the anterior wall of the rectum the coats of which are also implicated. A great portion of the utero-vesicle and utero-rectal cul de sacs are obliterated; and the passage of the ichorous discharge of the ulceration into the peritoneal cavity arrested only by the agglutination of the upper part of the cavity. The lower part of the rectum and also of the bladder are closely adherent to the vagina, and are blended into a gristly mass; on its anterior aspect the bladder is seen divided; and posteriorly, at the right side of the rectum, bristles are passed to show where the ulceration had entered through.

G. 435.—Extensive Ulceration of the Uterus, more of the inferior than of the upper part of the organ being involved in the disease. The surface is shreddy and flocculent, the margins of the ulcer are soft and easily broken down, the os tincæ and cervix have been completely destroyed, and the remainder of the uterus is enlarged to more than twice its natural size, its walls are proportionately thickened, and the vascularity greatly increased. The fallopian tubes are normal, but the ovaries are rather enlarged.

G. 436.—A most interesting case of corroding Ulcer of the Cervix and Os Uteri, in a woman, aged 44, and mother of one child; she also had had one abortion. Her first attack of illness was about December, 1842; in March, 1843, she was much worse, and suffered from pain in her back, and a coloured vaginal discharge; in April, when medical advice was sought, she was much thinner, had constant aching, pain, and loss ef appetite. On examination the os was so low down that there was distinctly seen, without the aid of a speculum, a large fissure on the right side of the anterior lip, two thirds of which, at that early period, was destroyed; from that period the ulceration gradually extended. The discharge varied, at times, in quantity, quality, and colour. The agonising pain never ceased till February, 1844, when she had a severe attack of peritonitis, she then became apparently easy, and died in ten days after. At no period could there be detected any peculiar hardness of the surrounding structures. *Post Mortem.*—The intestines were full, the pelvic viscera were with difficulty removed, the rectum was adhering to the back part of the vagina, the ileum was adhering to the upper and back part of the body of the uterus, the whole of the os uteri and cervix was destroyed, there was no appearance of fungoid growths from the surface of the ulceration, it had an even granular surface. The ulceration extended into the cavity of the abdomen, and destroyed a portion of the ileum, where it adhered to the body of the uterus. The fundus and body of the uterus are very little, if at all, enlarged, and apparently not altered in structure. There is no particular hardness of the uterus; there was a considerable deposit of hardened matter in the cellular structure, at the side of the pelvis, more particularly at the right side, and which had all the appearance of true schirrus deposit, it surrounded and partly obstructed the termination of both ureters, causing great increase in their size, and also considerable destruction of the pelvis of each kidney; the right was enlarged to the size of a hen's egg; and the ureter nearly as large as one of the small intestines; on the side of the bladder, opposite the termination of the right ureter, were bands of a pearly white schirrus-like matter. The lumbar and messenteric glands were enlarged, but soft, and when cut into resembled the internal structure of the spleen. This patient's mother died of uterine disease, and suffered very much from a swelling on the left side of the belly, just above the groin, accompanied by a purulent green discharge.

Presented by Mr. F. Elkington.

G. 437.—A preparation exhibiting disease of the Mucous Membrane of the Uterus. The uterus has been laid open, to show the flocculent state of the membrane. The uterus is a little enlarged, and its parietes, on the left side, thickened. Ulceration has commenced at the cervix and on the right side of the cavity, near to the fundus. There is a tumour of the right ovary; a portion of intestine is seen adhering to the fundus uteri, and to the diseased ovary.

G. 438.—A specimen of extensive Carcinoma of the Rectum, which had destroyed the greater part of the gut, and communicated, by ulceration, with the upper part of the vagina. A sec-

tion of the uterus has been made, which appears healthy, except at the lower and back part of the cervix, where ulceration had just commenced. There is a considerable deposition of adventitious structure into the lower part of the recto-vaginal septum.
Presented by Dr. Bell Fletcher.

G. 439.—Cancer of the Uterus and Vagina, in an advanced stage. The fundus uteri is slightly enlarged, and through the lateral section can be seen the os tincæ and cervix ulcerated, with a cauliflower, or fungoid growth, suspended from it; the walls of the vagina are indurated, a little thickened and rigid, its mucous membrane, in some parts, tuberculated, in others abraided and superiorly fungoid; anteriorly it communicates with the bladder by a small opening, through which is passed a loop of blue worsted. The interior of the bladder presents the same tubercular condition as the vagina, only in a minor degree; a portion of the rectum is seen, with symptoms of incipient disease The ureters, particularly the right, was greatly distended, caused by the deposition of new matter round its termination into the bladder; along the course of the left ureter are visible a chain of glands, which had become enormously enlarged, and filled with the same deposit as that in the walls of the bladder and lower part of the uterus.

G. 440.—A very true Cast, taken after death, from a patient who had lingered for some time with most extensive cancerous disease of the uterus, involving the vagina, bladder, and rectum. The lower part of the uterus is chiefly engaged; but the upper half of the vagina forms a large ulcer, which presents an irregular nodulated appearance. The extension of the disease has caused a large perforation between the vagina and bladder, and a similar communication to exist between the rectum and vagina; so that, in fact, this latter canal was the common cloaca, or outlet, for the excretions.

G. 441.—Human Uterus, greatly altered in shape and tissue from the presence of fibrous deposit in its parietes. There has been a section made into one of these tumours which was developed in the fundus of the organ externally, and is still covered by a thin layer of the uterine fibres and peritoneum ; it is a good specimen of fibrous growth. It arises from the uterus by a small pedicle ; and in a few rare instances, (see Simpson) the pedicle has become so slender that the tumour has at last actually separated from the uterus (see appendix) as the sub-mucous pariety has from the inside. The uterus has been opened posteriorly, and the mucous membrane is seen much thickened, and in a spongy state ; the right ovary and fallopian tube are glued together, and there is dropsy of the latter ; the left ovary is in a similar state, so that this alteration must have precluded further conception.

G. 442.—A very interesting specimen of what the Donor considered to be the White Tubercle of Baillie. The present section was taken from a tumour removed from the fundus of the uterus, and weighed 35 lbs. ; it has large vessels permeating its structure.

G. 443.—Human Uterus, greatly enlarged by the presence of a large tumour, the size of a goose-egg, growing from its anterior and inner wall, and altering the position of the organ especially. A section has been made through its structure, and it presents a very good specimen of a fibrous tumour. These morbid growths are found generally to consist of a mass of irregularly convoluted and contorted fibres, which are generally collected into a number of separate nodules, or lobules, connected together by loose cellular tissue, so that in each tumour we can generally trace an aggregate, as it were of smaller tumours. See preparation. In some cases—(as in prep. G. 450)—the tissue is not very compact, but in this case the structure is peculiarly dense and gristly, and a distinct line of demarcation exists between it and the surrounding tissue. The texture of the uterine wall, particularly near its fundus, is well seen, and its muscular parietes have all the ap-appearance of one under the influence of impregnation. By this section, the cavity of the uterus is also exposed, and the uterine extremity of the fallopian tubes, the patulous os uteri, and the vagina; posteriorly, the ovaries and fallopian tubes are seen in a very abnormal state, being bound together and to the uterus, by adhesions; there is also a dropsical infiltration of the left fallopian tube. *Presented by Dr. Bell Fletcher.*

G. 444.—Uterus of a Woman, containing a large tumour, the size of a child's head; it has nearly been enucleated from the internal structure of the uterus; but there still remain a few bands from the inner wall, which pass along the sides of the tumour, and seem to identify themselves with it.

G. 445.—This is a very interesting specimen of a Human Uterus, which contained a very large fibrous tumour; the subject from whom it was removed, was a woman, 46 years of age, who had one child, born at the eighth month; but for the last 20 years was a widow. In October, 1842, she was much troubled with constipation, and felt, in evacuating the bowels, as if something pressed on the rectum at that time; a small round tumour was discovered in the anterior part of the uterus; it could be felt by external pressure, and was nearly on a level with the pubis; the os uteri was nearly closed in October, 1843; she was scarcely ever able to sit up, the tumour had considerably increased; she occasionally had floodings to a considerable extent, and began about this time to suffer pain. In the beginning of February, 1844, the tumour was much increased, reaching to the umbilicus, was inelastic, the os uteri flat, very small, and the cervix obliterated; at the end of Feb. the pain was much worse, the periodical discharge more frequent and more profuse, the uterus enlarged very much anteriorly, and extended very low down, filling the vagina, the cervix uteri was obliterated. In March the tumour had passed through the os uteri, occupying the whole of the vagina; the finger could not be passed round the tumour, nor could the os be felt. *Post-mortem*—at the fundus, and within the parietes, and passing upwards, is a small encysted tumour; there is also a tumour about the size of a walnut, attached to the round ligament: it presents a fibrous appearance. On making a section of the uterus and internal tumour, it was found attached to nearly the whole fundus and right side of the uterus; two-thirds of the tumour had passed through the os externally: it is fibrous in its texture, with a number of cells at its lower part. The external surface of the tumour at the depending part is covered by small ulcerations; the bladder is thickened and contracted; the inner surface is covered by a dark substance, which cannot be easily peeled off. A most interesting and valuable preparation, and shows well the degeneracy of the structure.

Mr. F. Elkington.

G. 446.—This is another very interesting specimen of a Uterus containing a Tumour, the size of a large orange, attached to the inner surface of the uterus, near the entrance of the left fallopian tube; its early history was that of a fibrous tumour, but it has undergone a change, the fibrous character is less distinct than the preceding one, it exhibits beautifully one of the ways in which nature rids the uterus of these tumours, and, most probably, had the patient survived, it might have been cast off from its partial attachment to the uterus, under circumstances of uterine contraction (see preparation 481) or come away in the form of a polypus, or fœtid discharge; already it has been separated from the greater portion of its connection to the inner surface of the uterus, by ulceration of the intervening tissue, and might have become, in this way, unattached, and then discharged from the womb (see preparation 448); in all other respects the uterus and appendages seem healthy. A very small tumour seems to have sprung up in the right ovary.

Presented by Mr. G. Elkington.

G. 447.—Wax Model of a Fibrous Tumour, the size of a large orange, which filled the cavity of the uterus, and attenuated its parietes very much.

G. 448.—This jar contains a most interesting specimen of a Uterine Tumour; its central part consists of a semi-solid substance, which becomes more dense, and gradually assumes a very tough fibrous texture towards the circumference, which consists of a shell of bone. This tumour has been developed in the layers of the posterior wall, and, by its size, has greatly attenuated its substance, particularly on its anterior or internal surface, more especially, at the lower part, where the intervening tissue and mucous covering have actually given way, so that had the patient lived, most probably, it would have passed into the cavity of the uterus; and, in fact, the bodies described by the older Pathologists, under the name of "womb stones," were merely degenerated fibrous tumours, like the present, that had produced ulceration through the intervening mucous and other tissues, and thus reached the proper cavity of the uterus, from which they were occasionally afterwards expelled by uterine contraction. The cavity of the uterus is greatly enlarged, so that it would, with ease, have received the tumour, its parietes are greatly thinned; two bristles have been passed through the fallopian tubes, which are seen opening into the cavity of the uterus; the os uteri and the upper part of the vagina have ulcerated away, and quite disappeared; the ovaries and tubes are left. For this interesting specimen the Hospital is indebted to

Mr. G. Elkington.

G. 449.—The Uterus of a Woman, in whom nearly all the proper tissues of the organ were converted into, or replaced by fibrous tumours. The walls of the uterus were not much altered in shape; but, anteriorly, it has become connected to the bladder, and there is a general agglutination of the parts together, and a deposition of new matter, which caused an immense enlargement of the ureters, by constringing their entrance into the bladder. There has been a section made into one of the tumours, which grew from the anterior, upper, and peritoneal surface of the uterus, by a very small pedicle, and affords a good example of one that might have separated from the uterus; for there are many cases on record of these sub-peritoneal tumours being found in the cavity of the peritoneum; and, indeed, there is one in this Museum, found in the peritoneal cavity of the patient from which the double uterus was taken. In the uterus the os and cervix have melted away, except a few shreds marking where they were, and the ulcerative process has also eaten a communication into the bladder, through which aperture there has been passed a loop of worsted; the whole uterus and appendages seem in an abnormal state; softening and disorganization of the internal structures of the tumours have taken place, in consequence of a destructive degree of inflammatory action, which has ended in effusion of serum, and unhealthy purulent matter into the tissues of the tumours; the two ovaries also are in an abnormal condition, the right particularly, which has just begun to slough.

G. 450—This is a very interesting specimen of a Human Uterus, it has growing from its external surface two tumours, differing in their character. The one growing from the anterior wall, and deeply embedded in its substance, is a hard round dense tumour, characterised by its highly marked fibrous tissue (as seen in preparation G. 443); the other, which grows from the fundus, immediately beneath the sub-mucous tissue, is softer, and has assumed a loose cellular structure, the vesicular or cystic polypi of some Pathologists, and is, in fact, according to some authors, the kind of polypus which is the most common type of the large uterine polypi, consisting merely of a fibrous tumour, that had originally been placed immediately beneath or near the mucous surface of the organ, but, by afterwards enlarging in the direction of the uterine cavity, ultimately forming a pediculated or true uterine polypus.

G. 451.—This is a very interesting specimen of a Human Uterus, and like the last, it has two morbid growths developed in its tissues,—that is fibrous tumour and polypus. At first sight the uterus would seem almost a double one, but the appearance is produced by the development of a fibrous tumour growing from the right side of the neck of the uterus, and shooting outwards, upwards, and somewhat posteriorly, through the layers of that part of the broad ligament called ligamentum ovarii, and carrying with it the hypogastric vessels, the ovary of the right side, and free extremity of the fallopian tube; there is also a small tumour growing from the lower and anterior surface of the uterus, between the round ligaments. A section has been made into the substance of the fibrous tumour, and also into the uterus; in this latter organ the fibrous tumour is seen occupying and distorting its whole cavity, the uterine walls enveloping the tumour are raised a little from it by means of small black bristles; attached to the inside of the neck, protruding through, and blocking up the os, is seen a small polypus, growing by a narrow neck. The muciperous glands, or glandulæ nabothi, around the neck, are in a high state of development.

G. 452.—A large Fibrous Tumour connected to the fundus of the uterus; it has also contracted adhesions to the bladder in front, and intestine behind. The following is a brief history of the case:—Mary Boyce, aged 35, first menstruated at 14, soon afterwards she became ill from cold, and was not regular again for two years; the catamenia re-appeared at sixteen, and remained natural until a few months ago; she was married at 25, and has had two children at full period. About two years ago, she first noticed a tumour on the right side, which has gradually increased; her health continued good, and she menstruated regularly, but scantily. December 11, 1844, she was very much enlarged, and measured from scrobiculus cordis to pubes, 15 inches; around the waist, 34 inches; around the umbilicus, 53 inches; from umbilicus to pubes, 15 inches; midway between the umbilicus and pubes, 54. Fluctuation was distinct, and her health good; she said she felt no inconvenience except from her size. The posterior wall of the vagina was pushed down, and after sitting up long, bulged externally, but this disappeared when she lay down. The size and distention of the abdomen gradually became distressing, and she was tapped in December 1845; 30 quarts of clear fluid were drawn off, the character of which was *ascitic*; the abdomen was then carefully examined, and a tumour discovered in the situation of the right ovary, as large as an orange; she soon began to fill again, and in six weeks was as large as ever; she was tapped four times afterwards; the last time more than 50 quarts were drawn off; after this operation the tumour was found as large as a large cocoa nut. Mr. Elkington operated for the extirpation of the tumour, in July, 1846, in the presence of Dr. Evans, Dr. Waddy, Dr. Bell Fletcher, Mr. Southam, of Manchester, Mr. Knowles, Mr. Bindley, &c. It was found to be a case of general ascites, with a tumour slightly connected with the uterus; the gentlemen, who were in consultation, advised that the operation should be proceeded with, but the tumour was found to have more extensive attachment than had been anticipated, and it was, therefore, returned, and the wound closed. For some hours she remained comfortable and free from pain; she then had rigors, followed by vomiting and pain, and died on the 4th day. On the *post-mortem* examination, evidence of extensive inflammation was discovered. See Appendix.

Presented by Mr. F. Elkington.

G. 453.—The Uterus of a woman, containing tumours of various sizes, from that of a pea to the size of an orange, which are interspersed so thickly through it as to have caused the absorption of almost all the original textures, the inner coat of the cervix uteri alone retaining its natural arborescent appearance. The tubercles are found in all stages, from those as firm as gristle to the large one, which occupies the fundus of the uterus, and in which the ramollisement is universal, and contained the soft substance at the bottom of the jar.

G. 454.—A very beautiful specimen of Fungus Hæmatodes of the Uterus. The tumour, which is very large, appears to have commenced in the fundus, and to have grown outwards to the left side; it is seen pressing into the cavity of the uterus, near the fundus, at which part the mucous membrane is destroyed.

Presented by Dr. Bell Fletcher.

G. 455.—A wax cast, taken from the Human Uterus, affected with scrofulous disease. The organ is greatly altered and enlarged, far beyond its natural size; its parietes are thinned, and its cavity completely filled as far down as the commencement of the cervix, with a yellow tubercular matter of cheesy consistence. There are other tumours, but in a less forward state of development.

G. 456.—A Human Uterus, greatly altered and changed by disease; a posterior section has been made. Suspended by a few shreds is a polypus of the *cellular vascular* kind, growing from the neck of the os uteri; all the inner lining of the uterus seems to be in an hypertrophied soft spongy state. The parenchema of the uterine appendages, and the whole organ, seems altered, and a deposition of new matter infiltrated into their tissues; the right ovary is very much enlarged, and was completely filled with yellow tubercular matter.

G. 457.—A valuable specimen of Colloid Cancer of the left Ovary, which had ulcerated into the bladder. Part of the contents of the tumour was discharged with the urine, during life. Anteriorly, the bladder is seen laid open, and the colloid matter hanging through the ulcerated opening into the bladder. The posterior aspect of the preparation presents the following appearances:—the left fallopian tube very much enlarged and twisted upon itself, the tumour being carried to the right-side, and occupying the space between the body of the uterus and the bladder. The right ovary and fallopian tube are seen adhering to the tumour. A section of the uterus has been made posteriorly, and the sides separated by bristles, to show a fibrous tumour, about the size of a nutmeg, in the walls at the fundus; there is also a small one, the size of a bean, in the posterior wall, about the middle of the body; and a third in the anterior wall, projecting into the cavity. *Dr. Bell Fletcher.*

G. 458.—Ovary greatly enlarged.

Presented by Mr. F. Elkington.

G. 459.- -Human Ovary, greatly enlarged. No history.

Dr. Bull's collection.

G. 460.—In this preparation the right ovary was converted into a cyst, as large as an orange, and filled by a solid mass of fatty matter, very like adipocere; the external envelope was so attenuated, that the peritoneal coat, almost alone, circumscribed it; only part of the tumour has been preserved. In making a section, the fallopian tube was cut in two, the fimbriated extremity of which was embedded in the fatty mass. The peritoneal surface of the uterus presents many bands of membrane, the result of previous inflammation.

Presented by Mr. F. Elkington.

G. 461.—Uterus removed from a woman who died suddenly, from rupture of the basilar artery, the coats of which were found degenerated from the deposit of ossific matter in their tissue; there was also the same degeneration existing in the vertebral, splenic, and other arteries, as well as the uterine, which latter, from their origin to their final termination, were in a state of ossification; there are also deposited, in numerous places through the uterus and appendages, little irregular nodules of ossific matter; there is one of these the size of a small almond in the left ovary. The right ovary has been replaced by a tumour, the size of a pigeon's egg, which, when cut into, was found to be of a semi-cartilaginous texture. The co-existence of fibrous tumours and ossific deposit is very general; and Dr. Simpson says that "the principal tendency of all morbid fibrous tissues is to degenerate first into cartilagenous matter; and subsequently to become the seat of an osseous, or calcareous transformation;" which latter stage may commence around the circumference, (as in G. 448,) or in the centre, as in the left ovary of this uterus.

Mr. F. Elkington.

G. 462.—This is a very excellent specimen of a Cystic Tumour of the left Ovary, containing a large mass of hair and fatty matter, or adipocere; there is also developed in its parietes, one of those cross-bands, composed of a dense fibrous substance, which usually marks the locality of the development of teeth; in this instance there is one of these anomalous formations. The internal surface of the cyst presents, in different parts, the appearance of cutaneous tissue, described by Cruveilheir. Hairs, also, are recorded to have been morbidly developed in other localities, as in a steroid cyst, over the sternum, upon the cornea of the eye, &c., and also in the bladder. See Transactions of the Liverpool Pathological Society. In this uterus the os tincæ will scarcely admit a bristle; and there is a complete occlusion of the cervix, about an inch from the orifice, but there still remains a cavity in the fundus; the tubes are normal. The right ovary contains a spurious corpus luteum; the vagina is very short; the recto vaginal fossa is well seen.

G. 463.—This is a valuable specimen of Fallopian Pregnancy. The Uterus and Ovaries were normal; at the uterine extremity of the right fallopian tube was developed a tumour, which was about the size of a seven months' fœtal head; it pressed upon the colon and ilium, near the ilio-cœcal valve, to which intestine it had formed adhesions; it contained the bones of a three month's fœtus, folded around what appeared to be a fibrinous clot, about the size of a small orange. *History*—Mrs. Jones, aged 40, in the year 1840, was supposed to have aborted, believing herself to be four months advanced in pregnancy, and being seized with uterine hœmorrhage. For several months the menses returned at intervals, of from two to six weeks, after which she became regular to the time of her death. Soon after the attack of hœmorrhage, a tumour was discovered in the situation of the right ovary; it is said to have been about the size of a large orange, rather soft, and moveable; and that, during the space of six months, it gradually subsided, and became fixed in the position which it occupied at her death. For four or six months after her recovery from the supposed abortion, she was frequently seized with sickness, fainting, and painful contractions of the abdominal muscles. Near the end of 1840, after some increase of pain in the seat of the tumour, she became constipated in her bowels, with pain, distention of the belly, and vomiting of fœcal matter. From this condition she was relieved by a spontaneous evacuation on the ninth day. From this attack she rapidly recovered, having for some time a sense of constriction in the seat of the tumour, which was very tender. The sickness, fainting, and muscular contractions never returned. In June, 1844, she was suddenly seized with pain in the abdomen, vomiting, and distention of the bowels, which increased until her death. The matter vomited during the last three days had a fœculent smell; no evacuation from the bowels was obtained, and she died on the ninth day.—*Post-mortem*—No traces of inflammation in the abdominal viscera; the uterus and left ovary quite healthy; in the right iliac fossa lay the tumour which had been felt during life; it adhered firmly to the surrounding parts; the cœcum was attached to its outer border, and the termination of the ilium to its upper, in the front of which two bands of omentum connected themselves with the tumour, forming an aperture of about an inch in diameter, through which a fold of the ilium had passed *twice*; the bands of omentum constricting the bowel, and obstructing the passage of the fæces. —On the intestines, in this case, there was no uterine decidua, no uterine irritation, for the child seems to have ceased to exist for sometime, and the membrane and entire envelope seems so changed, that had it gone on for a little longer, either the child would not have been recognised, or it might have been mistaken for some of the strange ovarian tumours that are sometimes to be met with.

Mr. John Elkington.

G. 464.—In connection with the last preparation, though not a case of extra uterine fœtation, the following jar has been placed, which contains the bones of a Fœtal Calf, found in the uterus of a cow, which had been supposed in calf, and in which the symptoms of pregnancy had again subsided; when the animal was killed and the uterus was opened, the bones were found just as they are, the soft parts being entirely removed from the bones, and even some of them were beginning to be absorbed; the same fact, also, has been observed in other animals, and will go far to prove that the uterus is supplied by absorbents, and this would account for the entire disappearance of the placenta and its membranes, in those cases related by Professor Naegelé, of Heidelberg, and other continental writers, in which, after the expulsion of the fœtus, the membranes and placenta did not come away, and no trace of them whatever afterwards appeared.

G. 465.—Enlarged Ovary impeding delivery.

G. 466.—A rare specimen of an enormous Ovarian Dropsy, removed, together with the uterus, from a patient who died, after labouring, for a long time, under symytoms of uterine disease; the tumour had, in a great measure, filled the pelvic and abdominal cavities, and had contracted close adhesion to the surrounding parts. It consists of a series of cells, of all sizes, with thick resisting parietes, which, in some places, are more dense than in others; the cells all communicate with each other, and were mostly filled with a substance like opaque jelly, some of which is preserved in jar G. 493; the walls of the cells differ very much; in some, the inner membrane was smooth and cribriform, so that the viscid substance exuded through it as through a sieve; in others, there was a very thick layer of a substance, like lymph; others, again, had the cellular appearance of a cut orange, of this kind there are two cysts, but with larger and more irregular cells; the uterus had many adhesions, and the os uteri was much contracted; the right ovary is in a degenerated condition, and has one of those little pediculated cysts so common to this part; a similar one is seen attached to the walls of the large cyst; both the fallopian tubes are normal; the left has a bristle passed through it, and a small loop of silk at its fimbriated extremity.

G. 467.—A specimen of diseased Ovary, of which the following is a brief history :—Fanny Steventon became a patient of the Hospital in May, 1844, aged 54, had been married to her present husband 5 years; was a widow 2 years; she had had 3 children by her first husband; became unwell soon after her second marriage, and 12 months after began to swell, particularly in the lower part of the abdomen, and rather to the left side, she gradually became larger, and at the date of her admission was as large as a woman at the full period of pregnancy; the tumour being rather more prominent on the right side, but occupying the abdomen pretty equally. It was irregular, partly elastic, partly solid to the touch; fluctuation indistinctly traceable at the upper margin; the lower portion feeling solid, hard, and giving the idea of cysts of different sizes; the uterus was drawn upwards. Measurement:—round the body over the lower ribs, 37 inches; round the umbilicus, 47 inches; round the hips and lower part of the belly, 47 inches. She remained about the same till September 1st, suffering principally from the mechanical effects; towards the end of this month her health began to fail; she increased in size, the tumour pressing upwards against the stomach and liver; below, against the bladder and iliac vessels; she then became anasarcous, in the lower extremities, with the worst effects of that condition; derangement of the whole mucous tracts came on—apthæ of the mouth and throat; obstinate vomiting; a dark offensive vaginal discharge. January 10th, 1845—for the first time for 4 years she was free from vaginal discharge, continued to suffer from sickness, diarrhæa, and, at times, dyspepsia; her legs continued œdematous, discharging freely, and losing their gangrenous appearance; she rallied and was better for a time, but gradually sank and died, July 15, 1845. *Post-mortem*—Body emaciated; swelling of the lower extremities nearly gone; all the abdominal viscera very small, particularly the intestines, which have a melanotic appearance; the diaphragm pushed high up; the liver on a level with the fourth rib; the lungs small and melanotic; the heart small and soft; the kidneys sacculated, the right most so. The tumour with the uterus (which was healthy) weighed 8 pounds 10 ounces; it was formed by enlargement of the left ovary, and occupied a great portion of the cavity of the abdomen and pelvis, the larger portion being pushed to the right side, twisting the uterus half round; it consisted of a great number of cysts, of various sizes, containing a gelatinous fluid of different consistencies. The same disease had just commenced in the right ovary, which was the size of a hen's egg. The left fallopian tube was adherent to the tumour, very much enlarged and distended with fluid.

Presented by Mr. F. Elkington.

G. 468.—In this preparation is seen a large Ovarian Cyst, and a small fibrous tumour in the fundus uteri; a small portion of intestine is adhering. The ureters are also implicated in the mass.

G. 469.—Specimen of a large Ovarian Cyst, removed from a patient, and afterwards dried. This was a very favourable case for ovariotomy, as the pedicle was small, and the tumour isolated. Though there is but one cyst, still it retains something of the cellular form, which is well seen by looking inside.

G. 470—A specimen of Schirrus of the Uterus, with disease of both ovaries, removed from a woman, aged 41, who had one child, and enjoyed remarkably good health till January, 1843, she then had dyspepsia, and pain in her back,—no uterine discharge. In April she had an inflammatory attack of an obscure character, evidently affecting the pelvic viscera,—most likely, the ovaries; she had pain in the lower part of her belly, fever, constipation, and pain in making water; she then went into the country, and there had an attack of phlegmasia, and frequently, particularly when she went to bed, had a watery discharge from the rectum. In September she returned, and then the watery discharge was more frequent, the bowels more obstinately constipated. On examination, externally, a circumscribed tumour was found existing in the left iliac fossa, immoveable, and semi-elastic. Upon examination, per vaginam, the uterus felt hard and fixed, and occupied, anteriorly, the left side of the pelvis. On examination, per rectum, the tumour was found, *posteriorly*, larger in the right side, and encroaching on the cavity of the rectum. The discharges, per vaginam, were natural. She suffered little pain; the most distressing feature was obstinate constipation. She became dropsical, increasing to a great size, and died February 1844. *Post-mortem*—The abdomen was very large; and the peritoneal sac contained 2 gallons of serum; there were bands of lymph glueing the intestines together; the peritoneum and omentum were covered with numerous small tumours, varying from the size of a small pea to that of a marble; the colon ran over the central part of the tumour; the uterus was greatly altered in external appearance, and very hard; the os was patulous, and the lips swollen, with three small ulcers upon it. Posteriorly, the rectum was adhering to the uterus, very intimately; and, superiorly, a small portion of the ilium; anteriorly, the bladder was adhering to the uterus throughout, and was, with difficulty, dissected from it. The uterine appendages are so blended by extensive inflammation, with the surrounding parts, that they cannot well be traced without mutilating the preparation. There are numerous cysts, some isolated, others communicating with each other; and when water is injected into the posterior large cyst, it makes its way through the rectum, which may account for the watery discharge, which was the more frequent when the patient first lay down at night; she had very little pain during the whole illness, her great size causing the chief uneasiness.

Presented by Mr. F. Elkington.

G. 471.—The Uterus and its Appendages of a Woman who died from the effects of inflammation, after an abortion, at about the fourth month. The uterus and its cavity appear abnormally large for the period after abortion at which she died. The uterus has been laid open, and its inner surface anteriorly, appears to be coated with a flocculent false membane. On its outer surface are seen portions of recently deposited coagulable lymph, in the form of delicate membranous layers. These are most extensive anteriorly on the right side of the body of the uterus, and on the adjacent ovary; posteriorly, on the right side and in the region of the left ovary. The only remnant of the left ovary is the sac of a large abscess, which has been laid open, and which is best seen posteriorly. The parietes of the uterus are very thin.

Presented by Mr. F. Elkington.

G. 472.—The Uterus removed from a Cat, which died from puerperal peritonitis, a short time after kittening. One cornu of the uterus had sloughed away, and there was found a considerable quantity of pus in the peritoneal cavity of the abdomen. A section has been made of one of the ovaries, which exhibits a *cor-*

pus luteum, corresponding to each individual fœtus contained in that separate cornu. *Presented by Mr. Bindley.*

G. 473.—Longitudinal section of the Uterus and Vagina, taken from a patient who died labouring under severe uterine irritation. The organ is considerably enlarged, and its fibres rendered more conspicuous than in the normal state; its tissue is much softened, its vascularity greatly increased, large vessels are seen in the immediate vicinity of the mucous membrane, from which occasionally gushed alarming hœmorrhage; the peritoneal surface is coated with lymph; the ovary also is much enlarged, and its parenchema softened.

G. 474.—Uterus of a Woman, soon after delivery, showing the effects of recent inflammation, &c. A quantity of lymph is seen on its external surface, near to the fundus.

G. 475.—Uterus of a Woman, who, for long a time, had suffered from chronic irritation of the inner surface; the whole organ is increased in size, and its mucous and sub-mucous tissue greatly altered. This hypertrophied state extends down the cervix, likewise; in some places it had quite a velvety appearance; in others more of a fungoid elevation. The right ovary is converted into a simple cyst, the size of a pigeon's egg; the parenchema of the left is also much altered, and contains a small cyst. See Appendix.

G. 476.—The Uterus of a Woman slightly enlarged. The os tincæ was greatly tumefied and softened; in the mucous lining of the neck has just commenced a spongy and ulcerated state, and the inner lining of the fundus has taken on a very abnormal state. —No previous history. *Dr. Bull's Collection.*

G. 477.—Human Uterus, with its mucous lining in a very softened and velvety state. In the ovaries are two of those bloody cysts, a little dissected from the other tissue.—No history recorded. *Dr. Bull's Collection.*

G. 478.—Membrane expelled from the Uterus of a patient labouring under dysmenorrhea.

G. 479.—A dark-looking substance, expelled from the Uterus of a patient labouring under that form of chronic metritis called "membranous inflammation." This lymph, or fibrin, has retained the mould of the uterus, and at first might be mistaken for a very early product of conception, it seems to consist of blood and coagulated lymph.

G. 480.—This is a very perfect and valuable specimen, whether we look at it in a pathological or medico-legal point of view. It consists of lymph, or fibrin, cast off from the Uterus of a Woman, while labouring under a very painful form of dysmennorrhea; this false membrane had acquired a considerable size (though it sometimes does much larger) and formed a complete mould of the uterus, extending up the fallopian tubes, and is extremely like decidua—(see H. b, plate 34, figures 4, 5)—having on its uterine surface those little decidual cups so well seen in B. 118; and on other parts having that cribriform appearance so beautifully seen in B. 117. To the superficial observer these membranes may be, and have been, mistaken for abortions; and this error is the more likely to occur in consequence of uterine contractions, and hœmorrhage accompanying the expulsion. —I believe that one of the chief characters which distinguish this from the fœtal bag and membranes, is the absence of the villi of the chorion, so well seen in B. 117. We see this membrane in the foregoing numbers, as it is more generally seen, and occurs perhaps oftener than is supposed. We see perfectly similar fibrinous effusions upon the mucous membrane of the bronchial tubes, intestines, Schneiderian membrane, &c.; so that, as in the ovary serous cysts are more readily formed than in any other part of the body, from a deviation of the natural functions of that organ, so spurious decidua are more readily deposited in utero (under certain irritations), merely from a deviation of its functions; for the natural tendency of this organ is, as in pregnancy, to produce it. See Appendix.

G. 481.—This round mass was cast off from the Uterus of a patient, who was for a long time labouring under uterine irritation; it is something like that contained in uterus G. 446, only loosed from its attachment.

G. 482.—Portion of a large quantity of Menstrual Fluid, from a patient who had long suffered under amenorrhea, in consequence of vaginal occlusion of the external passages, or imperforate hymen, which was removed by operation.

G. 483.—The Epithelium, or external surface of the Mucous Membrane of the Vagina, produced by the action of strong astringent lotions on this canal; it retains, most beautifully, the mould of the vaginal rugæ.

G. 484.—A portion of Adventitious, or Dysmenorrhœal Membrane, cast off during menstruation, by a lady who was suffering from acute rheumatism. She died two years after of schirrus uteri. *Presented by Mr. F. Elkington.*

G. 485.—This is a beautiful specimen of an enormous enlargement of the Clitoris; it is bifid at its extremity, projecting downwards and forwards so as to conceal the labia. The tumour, which was attached by a tolerably broad base, is of a remarkably dense and hard texture; still it retains the peculiar spongy texture of the glans clitoridis, and nymphæ, and seems only an hypertrophied state of this tissue; the surface is rough, lobulated and studded over with warty-looking tubercles; the left lobe is by far the largest; on its surface are numerous sebaceous follicles, in an enlarged state. On looking to the cut surface, we see bristles put into the open mouths of the vessels which supply this part, and which, in the normal state, is also well supplied; in the centre is clearly and beautifully seen the corpora cavernosa, composed of a strong elastic tendinous and fibrous substance, forming a sort of tube, which is filled with a soft cellular, or erectile tissue, and is quite analogous to the corpora cavernosa penis in the male.

G. 486.—Large warty excrescence, growing from the lower part of the labium, and swelling out from its attached extremity; it is of a dense white fibrous tissue; the surface is rough, and studded over with numerous warty-looking turbercles.

G. 487.—A Pendulous Tumour, from the labia pudendi internum, to which it was attached by a round and narrow pedicle; it consists of a peculiar spongy erectile tissue, and resembles, considerably, the glans clitoridis; it is well supplied with vessels, and seems to be only an hypertrophied state of the nymphæ; it is covered by a thin skin, remarkably corrugated, and of a peculiar texture.

G. 488.—A Scirrhus Tumour of the Breast. The glandular part, the surrounding cellular tissue, the skin, and pectoral muscle, are all blended together in one uniform hard carcinomatous mass; the whole, though much changed in structure, is rather diminished in size than enlarged. The integument is yellow, and roughened by tuberculated elevations, and ulcerated in many parts; the nipple has sloughed away, and the knife has passed through it; bristles are passed through some winding chambers, which are, most probably, lactiferous ducts; some are very large. This state of the breast was not quite six months in developing itself.

G. 489.—A section from a firm Scirrhus Tumour of the Breast; it lay immediately around the nipple, which was much retracted by it.

G. 490.—A clot of Blood, found in the brain of a lady who died of puerperal apoplexy, during labour. She was a patient of Dr. Merryman. See his Synopsis.

G. 491.—A specimen of Fatty Matter, in appearance very much like dripping. It was removed from a large ovarian tumour, occupying the recto vaginal space, and obstructing delivery. The tumour was punctured with a curved trocar, per rectum;

the contents, when drawn off, were of the consistence of thick cream. The patient was afterwards delivered by Craniotomy, and recovered from the labour, but continues to suffer from the effects of a large tumour in the pelvis.

Presented by Mr. F. Elkington.

G. 492.—A portion of Vein and Artery, removed from a patient who died, shortly after delivery, from phlebitis.

G. 493.—The greater part of the Bladder of a Woman, which sloughed way in consequence of great and long-continued pressure during labour. See Dr. Merryman's Synopsis.

G. 494.—A very small portion of the contents of the Ovarian Cyst, in 94.

The following six preparations are specimens of diseased Pelvises, the measurements of which are given, and the history of each is given in the appendix.

G. 495.

Superior outlet.	Antero-Posterior, 1 4-10	Transverse, 3 8-10
Inferior outlet.	Antero-Posterior, 2	Transverse, 2½

The Lumbar Vertibræ lean to the left side; widest space, 9-10; narrowest, 3-12.

G. 496.

Superior outlet.	Antero-Posterior, 2	Transverse, 4 6-10
Inferior outlet.	Antero-Posterior, 8-10	Transverse, 4

In this pelvis, the lower dorsal lumbar and sacral vertibræ were curved.

G. 497.

Superior outlet.	Antero-Posterior, 1½	Transverse, 5½
Inferior outlet.	Antero-Posterior, 4	Transverse, 5 3-10

G. 498.

Superior outlet.	Antero-Posterior, 2 6-10	Transverse, 4½
Inferior outlet.	Antero-Posterior, 3½	Transverse, 4 2-10

G. 499.

Superior outlet.	Antero-Posterior, 1 2-10	Transverse, 4½
Inferior outlet.	Antero-Posterior, 2 2-10	Transverse, 4 6-10

Left side of the pelvis much narrower.

G. 500.

Superior outlet.	Antero-Posterior, 7-10	Transverse, 5
Inferior outlet.	Antero-Posterior, 2	Transverse, 5

PART VIII.

H.

UNDER this head are arranged all the Drawings, Plates, Diagrams, Books, &c., each subdivision being marked with a letter of the Alphabet, and also by the Roman capital H.

H. *a*. 1.—A chart of different modes of Generation and Reproduction of animate and inanimate matter, from its earliest history to the last, and most perfect of the Almighty's work—WOMAN.

H. *a*. 2.—In this number is represented the Sponge, which, although, now admitted into the animal series, yet, in many points, seems of a lower organization. In this species the mode of reproduction is as follows ;—at certain seasons of the year, if a living sponge be cut to pieces, the channels (of which a transverse section is made in this diagram) in its anterior are found to have its walls studded with yellowish gelatinous granules, developed in the parenchema which lines them ; by the means of these granules or germs, the sponge is produced, and when sufficiently matured they become detached; they are of an ovoid form, as represented in number five ; a portion of their surface is covered by innumerable hairs, or celiœ, by which they can row themselves at pleasure, and so, for a short period, at their dawn of life disperse themselves over the mighty world of waters. In the vegetable world plants are endowed with the power of spontaneous movement, or their seeds are plumed, or winged, to spread themselves. But the sponge rooted to the rock could not move if it did not when very young. Surely "the hand which made them was Divine."

H. *a.* 3, 4, and 5.—These diagrams are to represent the Structure, and how the large family of Polypus are reproduced. Some of these animals, as the Hydra, of which a representation is given, and many others, may be mechanically divided, and yet live; or be turned inside out, &c. But the general mode of reproduction is by granules or buds, which become developed from the common substance of the body, and they seem to spring from no particular part; first they are like delicate gelatinous tubes, as represented in plate 5, but as they increase they assume a form similar to the parent; become perforated at their unattached extremity, and around this oval extremity the tentacula of its species are developed, which vary, in number, from 5 to 8; at first these granules form part of the parent, and the food passes from the parent into these off-shoots, and they assist to fish for the common household till fully matured, when they become detached, and provide for themselves.

H. *a.* 6—This is a diagram of one of the Polyps. The Alcyonidœ are intimately related to the sponges, but are a step higher in the organization of beings. In the present diagram, which is of the Alcyoneum Exos, the stomach, which is marked 10, terminates in a tubular prolongation. But the main difference between the Alcyonide, or compound polyps, and Hydra, or simple polyps, consists in the possession of a reproductive organ or ovary, in which the germs of the future race are developed. This consists of a tubular filament (C.) which opens by one extremity into the stomach, into which the ova, when matured, are conveyed, and are ultimately ejected through the mouth, as in some of the class actenia.

H. *a.* 7.—Diagram of the Asterias. In these animals, as yet, there has not been observed any distinction of sexes. The ovigerous organs are very simple, and are arranged in bunches around the æsophagus, two distinct groups being lodged in each ray; their excretory duct perforates the osseous circle which encompasses the mouth of the animal, and is marked F.

H. *a.* 8.—Diagram representing two Earthworms in the act of copulation, as they are sometimes seen in the early summer months. These animals are acknowledged to be hermaphrodite, and that the congress of two individuals is essential to the fecundity of both. The generative organs are lodged in the anterior part of the body, indicated by an enlargement extending from the 7th to the 14th segment, they apply together these segments, in which their generative glands are situated, and remain for sometime in contact, joined by a frothy spume. Sir E. Home thought that the excitement, caused by the contact, was essential to reproduction, but that no transmission of impregnation took place; but later writers suppose there is but little deviation from what takes place in the leech, some of the annalidas, as Naidœ, Nereis, &c., propagate, or are reproduced by fissprous or spontaneous division; indeed, the common worm can renew most of its body if it has been divided.

H. *a.* 8—Diagram representing the racemose appearance of the Ovarium of the Bird; they are of all sizes. Such of the pedunculated ovisacs as have within them ovula ripe for exclusion, consist of two membranes; of these the external, as seen in the drawing, is vascular; but the lining membrane of the ovisac is thin and pellucid. These membranes become gradually thinned, and the ovulum produced is seized by the oviduct, and additions made as it passes along that duct. See preparation B. 101.

H. *a.* 10.—Yolk of the Egg, encased in the albumen or glairy fluid, secreted by the mucous membrane that lines the commencement of the oviduct.

H. *a.* 11.—In this diagram is represented the shell. *A*—Membrana Putaminis. *B*—Which consists of two Layers, and divides at the larger end, and leaves a space. *C*—Called Vesicula Aeris, filled with air, containing an unusual proportion of oxygen, next the albumen, and the chalazæ. *D*—Which is Imspissated Albumen, formed by the revolution of the yolk as it is pushed forward in the oviduct, forming two delicate and spiral cords, whereby the yolk is retained in situ. Next the vitelline membrane (E), containing the yolk (F) and vesicle of Perkingay G.

H. *a.* 12 and 13.—Membranes of the Egg, and forming of the Chalazæ.

H. *a.* 14 and 15.—Represents the first changes that take place in the Blastoderm, when incubation has commenced.

H. *a.* 16.—This diagram is to represent the parts contained in the impregnated Egg of the Hen, and is exactly similar to that of J. W. Jones, representing the section of the human graafian vesicle.

A—The Yolk or Granular Albuminous Fluid. *B*—The Granulary Membrane forming the periphery of the yolk. *C*—Vesicle of Perkingay. *D*—Vitellary Membrane. *E*—Inner and outer Layers of the Capsules of the Ovum. *F*—Endusium of the Ovary.

H. *a.* 17—Diagram representing the first or primitive trace of the Chick in ovo; "this line or primitive trace is swollen at one extremity, and is placed in the direction of the transverse axis of the egg." For particulars see Dr. Allen Thompson on the development of the vascular system in the fœtus of vertebrate animals.

H. *a.* 18 and 19.—Two diagrams representing the Chick in Ovo, from 24 to nearly 48 hours.

A—Rudiments of Lumbar Vetebra. *B*—Lateral portion of the Primitive Trace. *C*—Serous Layer. *D*—Mucous Layer. *E*—Vascular Layer.

H. *a*. 20.—Diagram representing the Circulation of the Chicken Ovo. The vessels of the heart are in a rudimentary state, not yet having perfectly completed their transition from the permanent law followed in fishes ; the vessels of the allontois are also delineated, passing through the fissure, in the liver, to the inferior cava ; the arteries are analogous to those of the umbilical in the mammalia ; the veins to those of the umbilical vein,for previous to the 19th day (after which the allontois begins to decline) the allontois arterializes the blood, and fills the whole extent of the membrana putaminis, and by this means becomes extensively exposed to the influence of the air that permeates the egg shell. There are a few of the omphalo mesentric vessels still visible—see preparation A. 39.

H. *a*., 21.—Enlarged view of the Copulative, or External Organs of Generation in the Human Female.

H. *a*., 22.—An enlarged diagram, representing a lateral section of the Pelvis of the Human Female, to exhibit the parts contained therein :—

A—Symphysis. *B*—Bladder. *C*—Ureter. *D*—Urethra. *E*—Vagina. *F*—Uterus. *G*—Round Ligament. *H*—Fallopian Tube. *I*—Rectum. *K*—Anal Opening. *L*—Abdominal Trunk of Vessels. *M*—Sacro. Iliac Synchondrosis.

H. *a*., 23.—Anatomy of the Nerves and Vessels, greatly magnified, of the External Organs of Generation in the Female.

H. *a*., 24.—Two drawings of the Human Uterus ; from one, the Appendages have been removed ; to the other, are attached the Ovaries, Fallopian Tubes, Broad and Round Ligaments.

A—Vagina. *B*—Os Uteri. *C*—Fundus Uteri. *D*—Round Ligament. *E*—Ovary. *F*—Fallopian Tubes. *G*—Broad Ligament, or Peritoneal Folds.

H. *a*., 25.—Large diagram, exhibiting the gradual transition of the Uterus, in the Animal Kingdom, from a doublo to a single organ.

A—Double Uterus, as in the Rodentia.

B—Uterus Bicollis, as seen in certain Carnivora, viz., the Panther, &c.

C—Uterus Bicorporeas, in the Ruminantiæ, &c.

D—Uterus Bifundalis, in the Horse, Ass, &c.

E—Uterus Biangularis—Edentata, Monkey.

F—Uterus Simplex, in Man.

H. *a.*, 26.—Uterus of a Pig.

H. *a.*, 27.—This represents a longitudinal section of the body of the Adult Human Female.

A—Symphysis Pubis. *B*—Bladder, *C*—Uterus. *D*—Vagina. *E*—That portion where it passes up and behind the Os Uteri. *F*—Recto Vaginal Cul-de-Sac of the Peritoneum, where it is reflected on the Vagina, and where the boundary to the Peritoneal cavity is very thin. *G*—Rectum. *H*—Spiral course of the Rectum. *I*—Vertebral Column.

H. *a.*, 28.—Coloured drawing of the contents of the parts contained in the Female Pelvis, as seen by a lateral section.—There is a line passed through the Uterus, to mark the inclination of its long axis, which is nearly parallel to the axis of the superior aperture of the Pelvis.

A—Symphysis. *B*—Bladder. *C*—Uterus. *D*—Vagina. *E*—That portion where it is passed behind the Os Uteri. *F*—Rectum. *G*—Section of Spinal Column. *H*—Peritoneal Cavity.

H. *a.*, 29.—Section of Human Uterus, with the Ligaments and Appendages of the left side retained. Two fine probes have been passed up the Fallopian tubes ; at that part of the tube where both probes meet, it is so contracted that it seldom will admit a probe ; its free end, called "morsus diaboli," is surrounded with fimbriæ, which grasp the ovary, while the ovum that has burst from the graafian vesicle, under the influence of impregnation, is carried through its canal into the Uterus, there to be matured, and finally expelled at the end of 280 days, or ten lunar months. See preparation A. 54.

H. *a.*, 30.—Drawings of two Ovaries: one (A) represents the usual uneven appearance of the Ovary in advanced age; whereas the external surface in that of the child and virgin state is generally smooth. A section has been made of one marked B, taken from a girl at full puberty, to show a number of vesicles (D) of various sizes, called Graafian vesicles, after De Graaff, imbedded in the stroma of the ovarian substance; these oval bodies are attached to the Uterus by the ligamentum ovarii, a portion of the peritoneal membrane, which connects the Uterus to the Pelvis; where it passes over the ovary it adheres very firmly, and forms the outer covering, or indusium; part of this fold is seen at either extremity, marked C. One or two of the vesicles appear large, more developed, and nearer the surface than the rest: mature for impregnation.

H. *a.*, 31.—This diagram is to represent a longitudinal section of the Human Gravid Uterus, about the third week. The fallopian tubes are seen entering the cavity of the Uterus; their inner surface is lined with the "membrana decidua" of Hunter, which was considered by him as a layer of coagulable lymph, "being at first scarcely of a more firm consistence than the curd of milk, or the coagula of blood." The ovum is situated at the fundus, and, by its development, is gradually pushing before it the decidua, forming the decidua reflexa.

H. *a.*, 32.—Diagram of the Fœtus and Membranes, about the fourth week.

A—Embryo. *B*—Vesicula Umbilicalis passing into the Ventricular and Rectum Intestine F. *C*—Amnion. *D*—Chorion. *E*—The Space which, in the early stage of fœtal life, exists between the Amnion and Chorion, and is considered the Alantois; this space sometimes remains after the general period of its obliteration, and contains a fluid, known by the name of Liquor Amnii Spurious, but, in fact, is nothing else than the Liquor Allontoides.

H. *a.*, 33.—Diagram of the Fœtus and Membranes, about the sixth week.

A—Chorion. *B*—Large arborescent extremities, the site of the Placenta. *C*—Allontois. *D*—Amnion *E*—Vesicula Umbilicalis. *G*—Communicating Canal between the Vesicula Umbilicalis and Intestines. *H*—Umbilical Vessels. *I*—Heart. *K*—Rudimentary Upper Extremities. *L*—Lower Extremities; from Carus.

H. *a.* 34.—Diagram containing four representations of the Human Embryo, in the fourth, fifth, sixth, and eighth week.

H. *a.*, 35.—Representation of the Human Embryo, at a very early period, when the Spinal Column appears like two dotted lines, with the cord in the centre.

H. *a.*, 36.—A coloured diagram of the Human Embryo at a very early period, and exhibiting, also, the first forming of the Placenta.

A—Decidua. *B*—Decidua Reflexa. *C*—Chorion. *D*—Vessels of the Chorion, collected to form the Placenta. *E*—Allontois now partially obliterated. *F*—Vesicula Umbilicalis. *G*—Amnion. *H*—Liquor Amnii. The umbilical vessels to form the Cord and Placenta are now seen. The Heart is still single, consisting of one auricle and one ventricle. But to Professor Baer we are indebted for the insight of how beautifully and *how wonderfully* the vascular system corresponds to the grade of development now present; for the aorta gives off four delicate, but perfectly simple branches, two of which go to the right, and two to the left side; each of these little arteries passes to one of the lobules, or septa, at the right of the neck, which corresponds to the gills, and, having united again with the three others, close to what is the first rudiment of the vertebral column, they form a single trunk, which afterwards becomes the abdominal aorta. These changes commence in the human embryo about the fourth week, and are completed about the seventh. See next diagram.

H. *a.* 37.—Diagram to show the Vascular apparatus in the Fœtus, and the Currents of the Blood. From the branches of the Aorta are dark lines drawn to represent what was the course of the current, about the sixth week, as the fœtus was passing through that grade, in the animal creation, in which the blood was oxygenised, by means of gills, as in the fish tribe, particularly the shark.

H. *a.* 38.—Enlarged diagram of the Pelvic and Thoracic Viscera, of the Fœtus and the circulation through them.

H. *a.* 39.—Drawing of the mature Fœtus, with its placenta attached, to show the circulation from the mother through the cord to nourish the child, and the return of it again to the mother. See C. 147.

H. *a.* 40.—Fœtus, at the full time, in utero.

H. *a.* 41—A portion of the outer surface of the Uterus, at the full time, removed to show the placenta

A, The layer of the Decidua (B), which lines the Uterus. The Chorion (C) has been opened to show the Amnion (D), which contains the Liquor Amnii.

H. *a.* 42.—A large diagram of the Belted Placenta of the Cat.

H. *a.* 43.—Figure of a young Female, with lines drawn to mark the different imaginary regions into which the human trunk has been divided by anatomists, for better understanding the position and locality of the parts contained therein.

H. *a.* 44.—Diagram representing the Trunk of a Female; the right lateral wall has been removed to show the bladder, vagina, rectum, uterus, reflection of the peritoneum, and other viscera which are above the uterus.

A—Bladder. *B*—Vagina. *C*—Uterus. *D*—Rectum. *E*—Symphisis Pubis. *F*—Reflection of the Peritoneum. *G*—Parts of the Intestines cut across. *H*—Section of the Liver.

H. *a.* 45.—Chart of the period of Pregnancy in Man, and in the lower animals.

H. *a.* 46.—Chart of the proximate causes of Labour.

H. *a.* 47.—View of the Gravid Uterus, in situ, covered with the peritoneum.

H. *a.* 48.—Diagram of the human Gravid Uterus, in situ, at the full time. The peritoneal coat has been removed to show the uterine vessels; and a small portion of the uterine fibres are separated to show the vessels going into its structure; the round ligaments are also represented, but their attachments are seen in the following diagram.

H. *a.* 49.—Gravid Uterus. This represents the insertion of the round ligaments, and the relative position which the gravid uterus holds to the bones of the pelvis.

H. *a.* 50.—Representation of the Gravid Uterus in situ. The peritoneal coat has been dissected off to show the vessels and the muscular structures of the uterus. These external layers of "fibres arise from the round ligaments, and regularly diverging spread over the fundus until they unite, and form the outermost stratum of the muscular substance of the uterus. See Bell, &c.

H. *a.* 51 and 52.—Two diagrams representing the action of the Longitudinal Fibres of the Uterus in dilating the os uteri, and the part they take in causing the most natural presentation of the child.

H. *a.* 53.—A plate containing four views of the state of the Cervix and Os Uteri, in the sixth, seventh, eighth, and ninth month of gestation.

H. *a.* 54.—Lateral section of the Female Pelvis, at the commencement of labour, to show the relation between the uterus and the os pubis anteriorly; and the rectum and spinal column;

at this period the os can be just touched by the finger. The large uterine vessels are also very conspicuous.

H. *a.* 55.—Coloured drawing of the Gravid Uterus, with a section of the pelvis and vagina, for the purpose of illustrating the gradual opening of the os uteri, the formation of the bag of membranes, and the mode in which the examination, per vaginam, is conducted. In this diagram the os is represented as being more easily touched and more open than in the preceding, and not so much so as in the following.

H. *a.* 56.—In this section of the Pelvis, the os uteri is more dilated; the bag of membranes have also protruded much more, and the uterus is lower in the pelvis. A portion of the lateral wall has been removed to exhibit the fœtus, the head presenting, and also to expose the placenta, which adheres to the superior and left lateral wall of the uterus, and is separated from the fœtus by the reflection of the membranes.

H. *a.*, 57.—In this coloured plate, the Bag of Membranes is represented as having passed externally, and the head of the Fœtus partially through the os uteri. The anterior wall has been removed, to show the presentation of the Fœtus, and its relative bearing to the surrounding parts; the Placenta is also seen attached to the fundus of the left side.

H. *a.*, 58.—Diagram to show the mode of supporting the Perineum, while the Head is passing through the Os Externum, so as to prevent laceration of these parts.

H. *a.*, 59.—First Position.

H. *a.*, 60.—Second Position.

H. *a.*, 61.—Third Position.

H. *a.*, 62.—Fourth Position.

H. *a.*, 63.—Plate of the Second Stage of Labour, showing the Head presenting in the most natural position; the occiput under the pubis, and the face in the hollow of the sacrum.

H. *a.*, 64 and 65.—Two diagrams, representing the Mechanism of Parturition, in two different stages of the preceding case.

H. *a.*, 66.—Represents the foregoing cases when the Head has passed, and the relative position of the parts to each other.

H. *a.*, 67.—Face presentation.

H. *a.*, 68.—Footling presentation.

H. *a.*,69.—A diagram representing the membranes broken, the Uterus contracted on the Fœtus, and the feet presenting.

H. *a.*, 70.—A diagram, the size of life, representing the left lateral Section of the lower part of the Spine and Pelvis of the Human Female, with the ligaments attached.

H. *a.*, 71.—Enlarged drawing of the lateral Section of the Spine and Pelvis, showing the axis of the Brim and Outlet.

H. *a.*, 72.—Lateral Section of the Female Pelvis, with its ligaments, showing the axis of the Cavity, and the direction of the Circle of Carus.

H. *a.*, 73.—Diagram, the size of life, of the left lateral portion of the Female Spine and Pelvis, crossed with lines, showing the direction of its axes, diameters, angles, &c.

H. *a.*, 74 and 75.—Two lateral views of the Female Pelvis, with outlines of the Uterus ; there are lines and circles drawn, to show the inclination of its axis ; and also others, to show the axis of the pelvic outlets, so as to indicate the course of the fœtus in its passage through the pelvis.

H. *a.*, 76.—Large diagram, showing the progress of the Child through the Pelvis, in natural parturition, along the imaginary line of the Circle of Carus (see diagram 72) ; and illustrating its different movements of rotation, &c.

H. *a.*, 77 and 78.—Two enlarged anterior views of Human Pelves, with their ligaments.

H. *a.*, 79.—Representation of the superior aspect of the Female Pelvis, marked with lines, to show the direction of the antero-posterior transverse and oblique diameter of the brim.

AP—Antero-posterio. *TT*—Transverse. *RO*—Right Oblique. *LO'*—Left Oblique.

H. *a.*, 80.—Diagram, representing the inferior aspect of the Female Pelvis, showing the diameter of its Outlet.

AP—Antero-posterior. *TT*—Transverse.

H. *a.*, 81.—Four different views of the bony Pelvis.

H. *a.*, 82.—Two sectional figures of the Bony Pelvis ; and two views of the Pelvis in a very young person, to show the original division of the os ilium into three parts, and also of its approximation to that of animals.

H. *a.*, 83.—Bony Pelvis of the Mammiffera.

H. *a.*, 84, 85, and 86.—Different measurements of the Bony Vault of the Fœtal Head—Bi-parietal, &c.

H. *a*, 87.—Measurements of the Fœtal Head.
A—Occipito-Frontal. *B*—Occipito-Mental, Perpendicular, &c.

H. *a.*, 88.—Facial Angle.

H. *a.*, 89 and 90.—Regional divisions of the Fœtus.

H. *c.*

Thirty-nine PLATES, from the Works of William Smellie, M.D. (1754), with Explanations, of which the following is a brief Index.

H. *c.*, 1.—This Plate represents a front view of the Bones of a well-formed Pelvis.

H. *c.*, 2.—This plate gives a lateral and internal view of the Pelvis, the same being divided longitudinally.

H. *c.*, 3.—This plate exhibits a front view of a Distorted Pelvis.

H. *c.*, 4.—This shows the External Female parts of Generation.

H. *c.*, 5.—This plate contains three figures, giving a front view of the Uterus in Situ, suspended in the Vagina; the anterior parts of the Ossa Ischium, with the Ossa Pubis, the Pudenda, Perinæum, and Anus being removed, in order to show the internal parts.

H. *c.*, 6.—This plate contains two figures: the first, of the Uterus, as it appears in the second or third month of pregnancy, its anterior part being here likewise removed, as in the former Table.

The second figure represents the Uterus in the fourth or fifth month of pregnancy, in the same view and section of the parts with the former figure, excepting that, in this the anterior part of the Collum Uteri is not removed.

H. *c.*, 7.—This plate represents the Abdomen of a Woman, opened in the sixth or seventh month of pregnancy.

H. *c.*, 8.—An anterior section of the Uterus, in order to show its contents and the internal parts, as they appear in the sixth or seventh month of pregnancy.

H. *c.*, 9.—A lateral section of the Pelvis, representing the Uterus in the eighth or ninth month of pregnancy.

H. *c.*, 10.—Gives a front view of Twins in Utero, at the beginning of labour, the anterior parts being removed as in the preceding Tables.

H. *c.*, 11.—Exhibits another front view of the Gravid Uterus in the beginning of labour, the anterior parts being removed as in the former Table; but in this, the membranes not being broken, form a large bag, containing the waters and fœtus.

H. *c.*, 12.—A lateral section of the Pelvis, representing the Fœtus in a natural position, with the vertex resting at the superior part of the ossa pubis, and the forehead towards the right ilium; and also outlines of the size and position of the uterus, under different circumstances, and how the stomach of the mother and presentation of the fœtus are affected by it.

H. *c.*, 13.—A lateral section of the Pelvis and Uterus showing the natural position of the head of the fœtus, when sunk down into the middle of the pelvis, after the os internum is fully opened, a large quantity of water being protruded with the membranes through the os externum, but prevented from being all discharged from the head filling up the vagina.

H. *c.*, 14.—This plate represents the Fœtus in a more advanced state than that delineated in No. 12.

H. *c.*, 15.—Represents the Perineum, in a first pregnancy, towards the end of labour.

H. *c.*, 16, 17, 18, and 19.—These four tables show in what manner the Head of the Fœtus is helped along with the Forceps, when it is necessary to assist with the same for the safety of the mother and child.

H. *c.*, 20.—Shows the Head of the Fœtus in the contrary position to the three last figures, the vertex being here in the concavity of the sacrum, and the forehead turned to the pubis.

H. *c.*, 21—Represents a presentation like the former, but, owing to the Fœtus being much larger, the Forceps are applied.

H. *c.*, 22.—Represents the Forehead of the Fœtus, presenting at the brim of the pelvis, the face being turned to one side, the posterior fontanelle to the other, and the feet and breech stretched towards the fundus uteri.

H. *c.*, 23.—Represents the Face of the Child, presenting and forced down into the lower part of the pelvis, the chin being below the pubis, and the vertex in the concavity of the os sacrum.

H. *c.*, 24—Represents the Forceps applied to the above case.

H. *c.*, 25.—Represents the Face of the Fœtus, presenting as in table 23, but in a contrary position, that is, with the chin to the os sacrum, and the bregma to the pubis, the waters evacuated and the uterus contracted.

H. *c.*, 26.—Represents the former with the Forceps applied.

H. *c.*, 27.—Gives a lateral internal view of a distorted Pelvis, divided longitudinally, with the head of a fœtus, of the seventh month, passing the same.

H. *c.*, 28.—Gives a side view of a distorted Pelvis, as in the former table, with the head of a full grown fœtus squeezed into the brim, the parietal bones overlapping each other, and compressed into a conical form.

H. *c.*, 29.—A lateral section of the Pelvis and Uterus, representing the breech of the fœtus presenting and dilating the os internum. The fore parts of the child are to the posterior part of the uterus; and the funis, with a knot upon it, surrounds the neck, arm, and body.

H. *c.*, 30.—Represents a case similar to the last, wth this difference—that the fore-parts of the Child are to the fore-part of the uterus.

H. *c.*, 31.—This represents the Fœtus, compressed by the contraction of the Uterus into a round form, the fore-part of the former being towards the inferior part of the latter, with one Foot and Hand fallen down into the vagina.

H. *c.*, 32 —This plate represents the Fœtus in a contrary position, the breech and fore-parts being towards the fundus uteri the left arm in the vagina, and the fore-arm without the os externum, the shoulder being likewise forced into the os uteri.

H. *c.*, 33.—Exhibits a third position of the Fœtus, when compressed into the round form, the belly, or umbilical region presenting at the os externum, and the funis fallen down into the vagina, and appearing at the os externum.

H. *c.*, 34.—This plate represents what the learned author considered one of the most difficult preternatural cases: the left shoulder, breast, and neck of the fœtus presenting, the head reflected over the pubes to the right shoulder and back, and the feet and breech stretched up to the fundus, the uterus contracted at the same time, in form of a long sheath, round the body of the fœtus.

H. *c.*, 35.—Shows the method of assisting the delivery of the Head of the Fœtus with the Curved Forceps, in preternatural cases.

H. *c.*, 36.—Represents the method of extracting, with the assistance of a Curved Crotchet, the Head of the Fœtus, when left in the Uterus, after the body is delivered and separated from it, either by its being too large, or the pelvis too narrow.

H. *c.*, 37.—Represents several kinds of Instruments, useful in laborious and difficult cases.

H. *c.*, 38.—Represents a Whalebone Fillet, which may be sometimes useful in laborious cases, when the Operator is not provided with the Forceps, in sudden and unexpected exigences.

H. *c.*, 39.—Represents several kinds of Instruments.

H. *d.*

SEVEN PLATES, with copious Notes, by GEORGE ROEDERER, Göttingen (1758); to which are also added, Two very extended Tables: one, of the Different Dimensions of the Uterus, from Birth to extreme Old Age; the other, of the Dimensions of the Ovary at all periods. *The Notes are in Latin.*

The following is a short Index to the Plates.

H. *d.*, 1.—A view of the Uterus, in the commencement of Labour; the os uteri is just beginning to dilate.

H. *d.*, 2.—A front view of the Fœtus and Placenta, in the natural position.

H. *d.*, 3—A view of the inner surface of the Uterus, with the placenta and its vessels, and also views of the cut vessels of the uterus.

H. *d.*, 4.—This is a beautiful plate of the Uterus, about the sixth month, with the different vessels, which supply the uterus, ovaries, and bladder, coloured:—the arteries crimson; the veins blue.

H. *d.*, 5.—Fœtus and Placenta in their natural position.

H. *d.*, 6—This plate contains 6 Figures; figures 1, 2, and 3 are to represent different dissections of the Uterine Vessels, and their connection with the Placenta; figure 4—a portion of Fallopian Tube; figure 5—Uterine Orifice of the Cervix Uteri; figure 6—Cervix Uteri, Vagina, &c.

II. *d.*, 7.—This plate contains twelve figures—

Fig. 1.

Lower part of the Uterus, representing the place where the Placenta adhered, the arborescent appearance of the os uteri, the glandulæ Nabothi, &c.

Fig. 2.

External view of the Os Uteri.

Fig. 3.

Posterior view of the same.

Fig. 4.

The posterior portion of the same Uterus removed, to show the cavity and inner surface of the cervix uteri.

Fig. 5.

The external appearance of the Ovary of a Woman who never was pregnant.

Fig. 6.

Ovary opened to exhibit the Graaffian vesicles.

Fig. 7.

Longitudinal section of the Ovary of a Married Woman.

Fig. 8.

Shows two views of an Ovary; first—the prominence, the corpus luteum makes on the external surface; and secondly that cut through showing its cavity.

Fig. 9.

External Cicatrix.

Figs. 10 and 11.

Longitudinal sections of an Ovary, showing a corpus luteum, in situ, and cut through.

Fig. 12.

Two small bodies from the Ovaries.

H. *e*.

THE following Plates are from MADAM BOIVIN and DUGES' Practical Treatise on the Diseases of the Uterus. There are 41 excellent Coloured Engravings, of which the following is a mere sketch. *For further information see the book (in French) accompanying these Engravings.*

H. *e*., 1.—This Plate contains Four Figures. The 1*st* is a representation of a Virgin Uterus, as seen posteriorly. The 2*nd*, as it is viewed anteriorly. The 3*rd*, as it appears laterally. The 4*th* figure gives a view of the internal surface of the uterus, at the time of the flow of the menstrual discharge.

H. *e*., 2.—This Plate contains Six Figures. The 1*st* is a representation of the Os Uteri before puberty. The 2*nd*, at puberty. The 3*rd* represents " Chez la femme qui a usé de cöit." The 4*th*, a Virgin Uterus, during menstruation. The 5*th* exhibits slight scars left on the angles of the orifice of the os uteri, after parturition. The 5*th* figure is a Uterus laid open to show its cavity. The woman was pregnant a few weeks.

H. *e*., 3.—Gives a beautiful representation of the Muscular Fibres of the pregnant Uterus, at the full time, as they appear anteriorly; also of the round ligaments, fallopian tubes, ovaries, &c. *See Notes.*

H. *e.*, 4.—Anterior view of a Uterus, after recent delivery of a fœtus, at full size; it is covered by peritoneum. *See Notes.*

H. *e.*, 5.—Same as last, with the peritoneum and sub-peritoneal uterine tunic taken off.

H. *e.*, 6.—Posterior view of the preceding Uterus.

H. *e.*, 7.—Posterior view of a Uterus turned inside out, immediately after delivery, to show the *Expulsary Muscles of Ruish*, cervix, glandulæ Nabothi, &c.—*See Notes.* The placenta was attached to the opposite side. See preparation B. 123.

H. *e.*, 8.—Prolapsus of the Vagina. The two openings through which the canula is passed resulted from the application of ligatures. *See Notes.*

H. *e.*, 9.—This Plate contains Eight Figures. The 1*st* is a view of Semi-Prolaps of the Uterus, which took place at the end of a regular delivery. 2*nd*, complete Prolaps, in consequence of a fall. The 3*rd* figure represents stays and adherences of the Vagina. 4*th*, Morbid Prolongation of the Vagina upon the orifice of the neck of the Womb; with tumefaction, and little red soft vascular tumours. The 5*th* exhibits the Uterus folded on itself, the fundus being inclined forwards. The 6*th*, the same seen in profile. The 7*th* is "Extroversion of the Neck of the Uterus." 8*th*, the same seen on its Face.

H. *e.*, 10.—This Plate contains Two Views of complete Prolaps of the Uterus. In figure 1 is represented a canula passed *down* into the bladder, which viscus also is prolapsed, and lies externally and anteriorly. This is a valuable hint to practitioners, as it shows *how useless it would be to pass the catheter in the ordinary way;* and, from want of knowledge on this point, men of high standing have been foiled.

H. *e.*, 11.—This Plate contains Five Figures. The 1*st* represents Prolongation of the Neck of the Uterus, and Prolapsus of this organ. The 2*nd*, Neck of the same Uterus, seen in profile.

The *3rd* Crural Hernia of the Uterus. The *4th*, Section of the Pelvis, representing Antiversion of the Uterus in the commencement of pregnancy. The 5th, Retroversion of the Uterus in the commencement of pregnancy.

H. *e.*, 12.—This Plate contains Two Figures. The 1*st* represents Inversion of the Uterus, occasioned by hurried extraction of the placenta ; and this accident is almost *invariably the result of mismanagement during labour.* The *2nd* Figure exhibits the appearance of the same Uterus five years afterwards.

H. *e.*, 13.—This Plate contains Three Figures of complete obliteration of the cavity of the Uterus, and transformation of the tissue of the organ. In figure 1, three tumours of stony hardness are seen developed on the fundus of the organ ; but their membranous envelope was injected with numerous vessels. In figure 2, there was no cavity, the inner part of the organ being converted into a compact substance, which could be cut like white soap, and indeed resembled it very much. The woman never was pregnant. See preparation G. 455. In the *3rd* figure the original cavity was obliterated, but the outlines were marked by a line perfectly triangular, of a bluish white, and of the hardness of cartilage.

H. *e.*, 14.—Interstitial Fibrous Tumours of the Uterus. This case had been taken for an extra-uterine pregnancy.

H. *e.*, 15.—This Plate contains Two Figures of Fibrous Tumours, developed in different parts of the Uterus.

H. *e.*, 16.—This Plate represents the Uterus of a young Girl, of 16, the martyr of Amenorrhea. The tumour consisted of white granulated matter, of solid appearance, and penetrating into the proper tissue of the organ.

H. *e.*, 17.—This Plate contains Two Figures. The 1*st* represents a "vesicular Abortion," with the fœtal membranes. There are 4 small red tumours, of the size of a cherry, of a solid consistence, containing a lardy substance. Figure 2 represents a lobular polypus, with a pedicle several inches long ; the subject of this was a maiden lady, aged 40.

H. *e.*, 18.—This Plate contains Five Figures. The 1*st* represents three pediculated Tumours, on the outside of the fundus of the Uterus. Figure 2, the same Uterus opened, within which are seen three little red pediculated bodies, of which each contains a small cyst, filled with a colourless albuminous matter, flowing out when punctured. Figure 3, Polypus in the Neck of the Womb, " which coincided with a cancer of the right breast," —no menses—no discharge. Figure 4 represents a Uterus greatly injected; and its cavity filled with a fibro-cellular tumour adhering by a thin accidental membrane. Figure 5 represents a pediculated Polypus, which fell off spontaneously.

H. *e.*, 19.—This Plate contains Four Figures. The 1*st* represents the posterior Section of the Uterus of a Woman who died of an affection of the brain, the second day after her delivery, which was natural; within its covering was a " palmated pediculated polypus, of an encephaloidal tissue," and a solid tubercle, of a yellowish white. The 2*nd* figure represents a Polypus in the form of the clapper of a bell, protruding externally The 3*rd* Figure represents a " Hollow Polypus, of enormous dimensions, which was successfully removed by ligature. *See Notes.* Figure 4 represents a vertical cut of the same Polypus.

H. *e.*, 20.—This Plate contains Three Figures. The 1st is the Uterus of a Woman three months after miscarriage. The whole uterus was soft; and there was also a soft spongy red body adhering to the internal surface of the uterus The 2*nd* figure represents the Uterus of an old Woman of 70. In the wall at the fundus was developed an unequally round stony concretion, and a pediculated vesiculous soft Polypus, containing many little vesicles filled with a yellowish fluid. The pedicle did not depend on the traction of the polypus. There was also a large tumour, of stony hardness, developed on the anterior portion of the uterus and vagina. Figure 3 is a pediculated Polypus of the Uterus, attached to the fundus of the uterus by a narrow neck; it passed from the uterus into the vagina.

H. *e.*, 21.—Represents Schirrus degeneration of the anterior lip of the mouth of the Womb. *See Notes.*

H. *e.*, 22.—Section of the preceding Uterus.

H. *e.*, 23.—This Plate contains Three Figures. The 1*st* represents Schirrus Tumefaction of the posterior lip of the Uterus of a patient who died of tuberculous phthisis, after a miscarriage at the sixth month. The palmated disposition of the fibres of the uterus, during early pregnancy, are well exhibited. Figure 2*nd* represents the Os Uteri in a schirrus state, largely open, its edges thin, hard and cut. This woman had an abundant flow of whites. Figure 3*rd* represents Incipient Cancer. See a valuable paper on this subject in the *Dublin Journal*, by Professor Montgomery. Both mother and sister of this lady died of cancer of the womb.

H. *e.*, 24.—This Plate contains Four Figures. The 1st represents a section of the Vagina, to exhibit a "fungus cancer, or cauliflower excrescence" growing from the anterior lip of the os uteri. The 2*nd* represents the Os Uteri after the excission of the excrescence, by means of scissors curved on the flat side; this patient died twelve days after the operation, from the degeneration of the cut surface into a frightful cancer. The 3*rd* is a cauliflower Excrescence, less developed, from another subject. In this case the whole of the end of the mouth of the womb was taken off. The 4th represents the portion of the same Uterus when taken off. The 5*th*, Cicatrix of the stump of the Neck of the same Uterus, a fortnight after the operation.

H. *e.*, 25.—This Plate contains Two Figures. The 1*st* represents a Uterus, the neck of which was removed by curved scissors. For particulars see *Notes*. The 2*nd* is the posterior view of a Virgin Uterus, with morbid adhesions, tubercular tumours, diseased ovaries, &c.

H. *e.*, 26.—This Plate contains Five Figures of the Os Uteri. In the 1*st* there is congestion of the Neck, and erosion of the edges of the Orifice. In the *2nd* the epithelium of the end of the Neck of the Womb was almost entirely worn away. This married lady, who was 24, without children, had an abundant flow of whites, and a puriform matter (derived from the inside) on the neck of the Uterus. Figure 3 represents the Neck of a lively red, and strewed with miliary whitish soft vesicles on the surface, accompanied with irregular menstruation and emission of blood during coition. In the *4th* case the neck of the womb was much tumefied and extensively ulcerated, with great hemorrhage, fever, and diarrhea. In the *5th* there was tumefaction, ulceration, frequent loss of blood, and habitual whites.

H. *e.*, 27.—This Plate contains Seven Figures. The 1*st* is a representation of the Os Uteri of a Girl of 18; there was great congestion with white granulations at the surface of the neck of the Womb; the tissues were soft, and there was a sanguine transudation under pressure, and this more abundant during coition—"habitude de la masturbation." In the *2nd* case there was ulceration, congestion, and dysmenorrhea, which was cured. The *3rd* was a case similar to that, cured. In the *4th* case there was tumefaction, hardness, extreme sensibility to the touch, with red spots, and dysmenorrhea, was cured, and she became pregnant; but the labour was long, owing to the induration of the neck. The mother of this lady died of cancer. In Figure 5 there is represented two small tumours "which coincided with a tumour of the breast." In figure 6 there was tumefaction, sensibility of the neck of the Womb, the Orifice of which was surrounded by numerous transparent vesicles, resembling white currants, accompanied by plentiful loss of blood. Figure 7—view of the same Uterus after the disappearance of the vesicles.

H. *e.*, 28.—This Plate contains Eight Figures. In the 1*st* figure is represented an enormous tumefaction of the anterior lip of the mouth of the Womb, which is surmounted by a fibrous crest; there was great congestion. The woman had no children, was addicted to the use of strong liquors—"Habitude de la masturbation." *2nd*—Gangrenous aspect of the neck of the same Uterus after the spontaneous destruction of the tumour. *3rd*—Neck of the Uterus very much developed, very hard, pinky, orifice widely open, abundant metrorrhagia, considered the result of venereal affection—" abus du coit habitude de la masturbation." *4th*—Induration, tumefaction. Colour—light pink, discharges both red and white abundant, ulceration in the interior of the neck—" abus du coit." *5th*—Ulceration of the anterior lips of the neck; posterior lip much lengthened; purulent matter flowing abundantly. There was in the case of this woman an abcess formed in the ovary that burst into the bladder. *6th*—Schirrus degeneracy of the end of the neck of the Womb. *7th*—Cancerous ulceration of the Neck and vertical section of the same Uterus.

H. *e.*, 29.—This Plate contains Three Figures of the same Uterus. *1st* is a posterior view to exhibit an ulcerated tubercular mass at the uterine surface of the Rectum; the Ovary was also tuberculated. *2nd*—An anterior view of the same Uterus. *3rd*, a vertical Section; the cavity was completely obliterated by a white solid substance of the consistence of tallow.

H. *e.*, 30.—This Plate contains Two Figures. The *1st* represents cancerous degeneracy of the Uterus, with destruction of the neck of the organ. *2nd*, Posterior view of a Uterus, the neck of which was totally destroyed by cancer; the ovaries, &c., are also implicated.

H. *e.*, 31.—Section of the Pelvis, to exhibit the total destruction of the Os and Cervix of the Uterus, from Cancer, and also of the Rectum and posterior division of the Vagina, from the same disease. In this case there was no previous hemorrhage.

H. *e.*, 32.—This Plate contains Three Figures. The *1st* represents a Uterus affected with softness, joined to phlebitis of this organ, in a woman 23 years of age, three weeks after delivery. In the *2nd* figure is seen a branchy Calculus, occupying the Urethra. The Third exhibits Varicoceles of the " Sub-puban Cords."

H. *e.*, 33.—This Plate contains Four Figures. The 1*st* is of a Uterus congested, with miliary vesicles on the end of the neck of the womb, with melanosis of the uterine tubes, and obliteration of their orifices. Two, 3, and 4 represent the Ovaries of a Woman who died of confluent Small-pox, in the seventh month of pregnancy.

H. *e.*, 34.—Hydropsy of the left Ovary and Tube. See Madame Boivin's " Memoire sur les causes de L'avortement," observation xx. p. 96.

H. *e.*, 35.—This Plate contains Three Figures. The 1*st* represents Hydropsy of the right fallopian tube. The Uterus is seen on its posterior aspect. 2*nd*, Cancerous Polypus, with hydropsy of the tubes and ovary; this is an anterior view. The subject was 60 years of age. This polypus joins itself in an insensible manner with the tissue of the uterus ; but its lower part spreads out into soft pultaceous reddish brown fringes, strewn with numerous vessels, and falling into putridity. The neck of the uterus is very dilated, fibrous, and resisting, letting the fundus of the uterus pass a little out. The Vagina is dilated, and its mucous membrane swelled, soft, pulpy, with superficial ulcerations, and presents some fringes as if schirrus.

H. *e.*, 36.—Fallopian Pregnancy in a young woman who died of the accident; the fœtus was found in the iliac fossa ; and the uterus was soft, red, and pretty large, and lined with a reddish pulpy membrane.

H. *e.*, 37.—This Plate contains Eight Figures. The 1*st* represents the Ovary of a young Girl, a maid, aged 18, she had only menstruated a few times ; the ovary is large and surmounted by a transparent cyst of the size of a plumb, there were also smaller ones in the substance of the ovary. The 2*nd* is the Ovary of a Woman, recently married, who died of typhus fever. The 3*rd* Figure represents the same, cut through, exhibiting a *corpus luteum*. The 4*th* represents Ovaritis; the vessels are minutely injected. 5*th*, Ovary of a young Woman, who died on the fifteenth day after parturition; the ovary was filled with very large vesicles of the colour of mother of pearl, these were surrounded by a mucous fluid like that which they contained. 6*th*—Ovary of a young Girl whose menses were irregular; the uterus was atrophied; the ovaries were large, white, and soft, containing transparent vesicles. 7*th*—The other Ovary of the same subject, but the vesicles are not so large, and more numerous. 8*th*—Uterus and Ovary of a young Girl on the point of marriage; the body of the uterus was red and congested; the tubes were vascular; and the ovaries, in colour and form, resembled a bunch of black currants.

H. *e.*, 38.—Uterus of a Woman, aged 24, supposed to have been four months and a-half with child. The Uterus was double its natural size; its tissue of a dark red, and soft; os uteri normal. The right Ovary was filled with a solid tenaceous greenish matter. Smell—pungent. The Cyst was of a violet brown on the outside, about a line in thickness, and lined with a fine consistent membrane. Left Ovary, the size of a swan's egg, soft, filled with a thick purulent yellowish white matter; the surface was covered with pus, and adhered to the sigmoidal flexure of the colon.

H. *e.*, 39.—Degeneracy of the two Ovaries in a Woman, 22 years of age; the right ovary weighed 7 pounds, it was in contact with the liver. The small tumours were "collections of limpid serosity;" the larger one was only adherent "by a membranous vascular tissue, extremely loose, at the tube." The left ovary was transformed into a mass composed of hard bodies close together. The uterus (marked F) is in an atrophied state. This woman was supposed to have been pregnant, as the pains, exactly similar to those of labour, came on at the ninth month; the lower extremity of the tumour being engaged in the basin, several accoucheurs were successively called, some took it for the head; others, for the breech of the child; on being brought to the Maison de Santé, Madame Boivin was able, but with much difficulty, to recognise the uterus in a state of vacuity. After 20 days the patient died of a consecutive peritonitis.

H. *e.*, 40.—This contains Six Figures. The 1*st* represents an Encysted Tumour, at the right side of the vulva, accompanied by a Cancerous Affection, and total destruction of the Womb. 2*nd*—section of the Pelvis representing "a stercoraceous fistula, which, from the rectum, communicated behind the vagina," opening, externally, at the inferior edge of the right lip of the vulva. *F*—Rectum. *C*—Neck of Uterus. *D*—Fundus. 3*rd*—Encephaloidal Tumour at the orifice of the Urethra. 4*th*, Red, soft, Fungus Tumour at the external orifice of the Urinary Passage. 5*th*, Pancreatic Cancer of the vulva, all this mass was supported by a common pedicle; in order to make water the patient had to raise it up. 6*th*, Closure of all the External Organs of Generation, from the irritation of a tetter, accompanied by an insupportable itching. The patient was 66 years of age, and, though living with her husband 30 years, never had a child.

H. *e.*, 41.—Hematoidal Cancer of the Clitoris; at first it was uncommonly irritable, the granulating surface was of a brown red, bleeding at the slightest touch, and as it fell on the urinary passage each emission of urine was very painful; it was cut off, and the woman perfectly recovered. In this Plate also there are two representations of Madame Boivin's speculum and levier fenetre to bring the neck of the uterus to the centre of the vagina.

H. *f.*

Twenty-two COLOURED PLATES, published by Dr. Hooper, 1829. The 1st is of a Uterus in its normal state; the rest are drawings of various Diseases of the Uterus and its Appendages, taken immediately after death.

H. *f.*, 1.—This Plate gives two different representations of the Adult Uterus and its appendages, in a natural and healthy state.

H. *f.*, 2.—Abscess of the Uterus; the Appendages are also involved.

H. *f.*, 3.—Abcess of the Uterus, and congestion, &c.

H. *f.*, 4.—Sub-cartilaginous Tumours of the Uterus. In this Plate two different uteri are represented: in one, the tumours have made their way externally, covered by peritoneum alone. In the other, they are covered by mucous membrane, having advanced inwards.

H. *f.*, 5.—Sub cartilaginous Tumour of the Uterus, with occlusion of the fallopian tube.

H. *f.*, 6.—Uterus greatly enlarged, and altered in shape and texture, from fibrous tumours.

H. *f.*, 7.—This Plate contains Three Figures, illustrative of Bony and Sub-cartilaginous Tumours of the Uterus.

H. *f.*, 8.—Hæmatoma of the Uterus, the neck and os of which are entirely destroyed.

H. *f.*, 9.—This Plate represents a second specimen of the same disease as the previous plate.

H. *f.*, 10.—Cephaloma of the Uterus ; the tubes are engaged.

H. *f.*, 11.—Represents a second case of Cephaloma of the Uterus.

H. *f.*, 12.—This Plate represents a third case of Cephaloma of the Uterus, with dropsy of the Ovaria.

H. *f.*, 13.—Cephalomatous Polyps of the the Uterus.

H. *f.*, 14.—Schirrus of the Uterus.

H. *f.*, 15.—Carcinoma of the Uterus, which has nearly destroyed the whole organ.

H. *f.*, 16.—Inflammation of the Fallopian Tubes.

H. *f.*, 17.—Dropsy of the Tubes. There are two different cases illustrated.

H. *f.*, 18.—Two different cases are represented in this plate of Dropsy of the Ovaries and Fallopian Tube. In one, the ovary has been opened to exhibit its multilocular character.

H. *f.*, 19.—Dropsy of the Ovary. In this case there was great vascularity.

H. *f.*, 20.—Dropsy of the Ovary. It was very vascular, more so than is usually the case. A section has been made to exhibit its multilocular character.

H. *f.*, 21.—Vesicles of the Placenta; these are generally called Hydatids; but are more likely the villus terminations of the vessels of the chorion, in a degenerated state.

H. *f.*, 22.—Hœmatoma of the Ovary.

H. *g.*

EIGHTY ENGRAVINGS on subjects connected with the Phenomena of Labour, &c., by J. P. MAGGRIER, M.D., Professeur d' Accouchemens, &c., Paris, 1822.

H. *g.*, 1.—This Plate gives an outline of the difference between the human Male and Female Figure.

H. *g.*, 2.—Three Figures of the Adult, and Fœtal Female Bony Pelvis.

H. *g.*, 3.—Longitudinal Section of No. 2.

H. *g.*, 4.—Superior and inferior Outlets of human Female Bony Pelvis, compared with that of the Mammifera.

H. *g.*, 5 and 6.—Views of irregularly developed and deformed human Female Pelvis.

H. *g.*, 7.—Plate to illustrate how to measure the Outlets of the Pelvis.

H. *g.*, 8.—Plate to illustrate the axis of the Uterus and direction of the Child, in the different stages of Labour; and also how to measure the capacity of the Pelvis by the finger.

H. *g.*, 9 and 10—View of the External Organs of Generation.

H. *g.*, 11.—Section of the Pelvis, to show its contents, and the relative position to each other.

H. *g.*, 12.—Uterus and Vagina; the latter organ laid open, to show the os uteri and the vaginal corrugations.

H. *g.*, 13.—This Plate contains Two Figures. 1*st*—Uterus isolated from its appendages and the other abdominal viscera. 2*nd*—As it lies in the Pelvis, and its relation to the Pelvic Viscera, as rectum, bladder, &c.

H. *g.*, 14.—The 1*st* figure is that of a Uterus, opened to exhibit its cavity. The 2*nd* is a profile view of a perpendicular section, to show the thickness of its walls, and cavity.

H. *g.*, 15.—The 1*st* figure is a view of the Fallopian Tube, and its connection with the Uterus. The 2*nd* represents Fallopian Pregnancy. The 3*rd*, an Ovary, to show its external appearance. The 4*th*, Section of the last.

H. *g.*, 16.—The 1*st* figure shows the constriction between the neck and fundus of the Uterine cavity. The 2*nd* shows the course and insertion of the round ligaments.

H. *g.*, 17.—This Plate gives Eight Views of the development of the human Fœtus and its appurtenances in utero, from the third week to the fifth month.

H. *g.*, 18.—Contains Two Figures of the human Fœtus in the seventh and ninth month of gestation.

H. *g.*, 19.—Two views of the Placenta, its uterine and fœtal surfaces.

H. *g.*, 20.—The 1*st* figure represents a Double Placenta. The 2*nd*, Knots on the Cord.

H. *g.*, 21.—Contains Four Figures. The 1*st*, Fœtal Liver, to show the nearly equal size of the right and left sides; and also the distribution of the vessels that carry the blood through it during intra-uterine life. The 2*nd*, Heart and Lungs of a Fœtus, to show the Ductus Arteriosus. The 3*rd*, Heart, to show Foramen Ovale open. The 4*th* figure represents the Umbilicus, portion of the Umbilical Vein, and the two Arteries that run along the bladder. This Viscus is represented, and also the remains of the Uracus, &c.

H. *g.*, 22.—Fœtal Skeleton.

H. *g.*, 23 and 24.—Representations of Fœtal Heads, with the different measurements delineated on them.

H. *g.*, 25 and 26.—Front and side views of a Pregnant Woman in the third, sixth, and ninth months, with lines to mark size, axis, &c., of the womb at these different periods.

H. *g.*, 27 and 28.—Side view of the Pregnant Uterus in situ, with its relation to other parts.

H. *g.*, 29, 30, 31.—These Plates are to represent the mode of Manual Examination to ascertain Pregnancy, &c.

H. *g.*, 32.—The state of the Os Uteri in the third, sixth and ninth month.

H. *g.*, 33, 34.—The four positions of the Fœtal Head in labour.

H. *g.*, 35.—Represents the Head passing through the external parts, and mode of supporting the perineum.

H. *g.*, 36.—These Plates (*from No.* 36 *to* 60) represent different Abnormal Labour cases, with the relative position the fœtus bears to the bony pelvis, and also the means (by the hand and instruments) of assisting nature in the delivery of the child.

H. *g.*, 61, 62, 63, 64.—Plates of the different stages of the Cæsarian Operation.

H. *g.*, 65, 66, 67, 68, Represents the impaction of the Fœtus and division of the Symphisis Pubis to liberate the head, &c.

H. *g.*, 69, 70, 71, 72.—Plates of different modes of extracting the Placenta, and also Placenta Prævia, &c.

H. *g.*, 73, 74, 75, 76.—Plate of different Instruments used by the Accoucheur.

H. *g.*, 77, 78, 79, 80.—Plates to exhibit the proper manner of holding the Infant to the breast; the mammary gland, shields for the nipple, lactomiter, &c.

H. *b.*

THE Anatomy of the HUMAN GRAVID UTERUS, exhibited in THIRTY-FOUR PLATES (some of which contain many Figures), by WILLIAM HUNTER, M.D., Birmingham, 1774. A Table accompanies the Plates, with copious References and valuable Notes.

H. *b.*, 1.—Human Pregnant Uterus, at the full period, as it appeared when the abdomen was opened by a crucial incision.

H. *b.*, 2 and 3.—Side Views of the same Uterus, showing its relative position with regard to the rest of the abdominal viscera.

H. *b.*, 4.—Front View of the lower part of the Female Trunk, the Pubic Bones, &c., being removed.

H. *b.*, 5.—Cavity of the Womb opened, by means of which the decidua and placenta are exposed in the injected state. *To the Anatomist the Notes on these Plates are invaluable.*

H. *b.*, 6.—Represents the Child in the Womb, in the natural situation.

H. *b.*, 7.—Cavity of the Womb opened,—the child removed.

H. *b.*, 8.—View of the parts which lie immediately behind the womb, &c.

H. *b.*, 9.—Full-size View of the Pelvis, with its contents and adjacent parts.

H. *b.*, 10.—This Plate contains Three Figures. The 1*st* exhibits a specimen of the Uterine Vessels. The 2*nd* shows the inside of the Placenta when injected. The 3*rd* is a portion of the internal surface of the Womb. *See Notes.*

H. *b.*, 11.—Front view of the Womb injected, &c.

H. *b.*, 12.—Placenta Prævia, &c., which caused death by hemorrhage.

H. *b.*, 13.—Fœtus in utero, head upwards.
H. *b.*, 14.—Three Views of the Uterus at the full time, turned inside out; and the decidua brushed off, to show the muscular structure.

H. *b.*, 15.—Four Figures, to explain the Arterial system of the Pregnant Womb. *See Notes.*

H. *b.*, 16.—View of the Branching of the Uterine Vessels.

H. *b.*, 17.—Front view of the injected Pregnant Uterus, &c.; the vessels are seen passing towards the placenta.

H. *b.*, 18.—Shows the Plexus of large vessels, especially the veins of the fundus of the uterus.

H. *b.*, 19.—Uterus opened; part of the placenta detached from the uterus, and the vessels passing between the uterus and placenta delineated. The child's head is seen obscurely through the membranes near the os uteri. *See notes.*

H. *b.*, 20.—Fœtus in utero.

H. *b.*, 21.—Fœtus in utero, at the seventh month, &c.

H. *b.*, 22.—Section of the Pelvis to show its contents.

H. *b.*, 23.—View of the Pelvis in utero at the sixth month.

H. *b.*, 24.—Contains Four Figures. 1*st* represents the Placenta adhering to the womb, its sharp substance being filled by injection from the uterine vessels. 2*nd*—Section of the foregoing. *3rd*—Decidua with those Convoluted Uterine Arteries which are dispersed through it. *4th*—Decidua, with the Uterine Veins which run through it. *See notes.*

H. *b.*, 25.—Uterus and Fœtus in the fifth month.

H. *b.*, 26.—This Plate contains Four Figures of the circumstances attending a retroverted womb in the fifth month. 1*st* shows the Bladder enormously distended. 2*nd*—that cut through to exhibit the Os Uteri. 3*rd*—a posterior view of the whole contents of the Pelvis, consisting principally of the womb. 4*th*—the Womb opened.

H. *b.*, 27.—Two views of the Pregnant Uterus in the fifth month, the arteries and veins injected with different coloured wax.

H. *b.*, 28.—Two views to show the reflexion of the Decidua forming the decidua reflexa. *See notes.*

H. *b.*, 29.—Contains Five Figures. 1*st* shows Decidua Reflexa going off from the edge of the placenta to cover the chorion. 2*nd* shows the lace-like appearance of the Decidua. 3*rd* to show the cavity of the Corpus Luteum in the beginning of the fifth month. 4*th*—Decidua filled with vessels. 5*th*—section of the Uterus and Membranes.

H. *b.*, 30.—Shows the external surface of the Placenta, and the vessels passing into it from the womb, &c.

H. *b.*, 31.—Contains Three Figures. 1*st*, a Uterus, in the fourth month, opened, so as to show the outer surface of the decidua and neck of the womb. 2*nd*, position of the Fœtus as seen through the transparent membranes in this subject; the decidua reflexa was scarcely perceptible.

H. *b.*, 32.—In this Plate is a front view of the Uterus, opened, to show the child and state of the cervix uteri; and also a representation of a longitudinal section of the womb, placenta, membranes, &c.

H. *b*., 33.—Six Figures of different Abortions. 1*st*—one at ninth week; the Decidua is turned outside to show the smooth and opaque decidua reflexa. The 2*nd* is a vertical section of the same. 3*rd*—one at the eighth week, and shows the cavity between the decidua and the other membranes. 4*th*—the same, a portion of the Decidua Reflexa being dissected off to show the loose vessels on the outside of the chorion. 5*th*—the same, the Decidua dissected off to show the chorion, &c. 6*th*—the same, the Membranes opened; the vesicula umbilicalis is seen. *See notes.*

H. *b*., 34.—Contains Nine Figures of abortion, at the fifth, fourth, and third month. The notes on these are particularly worth reading.

January 12, 1848.

The publication of the Appendix is necessarily deferred sometime. It is intended that it should contain a description of all Preparations which have been added to the Museum since the commencement of the Catalogue; many of those Preparations are not in a state to put up, and others are being almost daily received; so that it could not be rendered complete at present.

ERRATA.

At page 11	line last	for *form*	read forms
„ 12	„ 1	for *support*	read supports
„ 13	„ 1	for *labiæ*	read labia
„ 13	„ 27	for *parieties*	read parietes

The same mistake also occurs at pages 14, 32, 67, 92, 99, 101, 102 twice, 107 twice, 121, 143, and 144.

„ 14	„ 5	for *choilopoietic*	read chylopoietic
„ 19	„ 25	for *Boivier*	read Boivin
„ 21	„ 10	for *leuteum*	read luteum
„ 29	„ 14	for *deferentiæ*	read deferentia
„ 30	„ 24	for *bifed*	read bifid
„ 32	„ 35	for *becomes*	read become
„ 45	„ 4	for *become*	read becomes
„ 47	„ 7	for *nectory*	read nectary
„ 47	„ 13	for *sometime*	read sometimes
„ 50	„ 2	for *seperation*	read separation
„ 52	„ 34	for *mucilagenous*	read mucilaginous
„ 55	„ 9	for *glary*	read glairy
„ 56	„ 7	for *fassiculi*	read fasiculi
„ 58	„ 19	for *membraneous*	read membranous
„ 64	„ last	for *lie*	read lies
„ 80	„ 26	for *hypertrofied*	read hypertrophied
„ 80	„ 29	for *epithelion*	read epithelium
„ 101	„ 26	for *cartilagenous*	read cartilaginous
„ 103	„ 31	for *astragulous*	read astragalus
„ 106	„ 24 and 30	for *epididymus*	read epididymis
„ 108	„ 6	for *omphato*	read omphalo
„ 109	„ 9	for *cribreform*	read cribriform
„ 119	„ 7	for *vertibral*	read vertebral
„ 119	„ 8	for *was*	read were
„ 122	„ 13	for *crebriform*	read cribriform
„ 122	„ 7	for *ethmoids*	read ethmoides
„ 132	„ 17	for *odema*	read œdema
„ 132	„ 30	for *frequently*	read frequent
„ 132	„ last	for *was*	read were
„ 133	„ 31	for *scarletina*	read scarlatina
„ 134	„ 16	for *extravesation*	read extravasation
„ 134	„ 17	for *seminalæs*	read seminales
„ 135	„ 13	for *ilio cæcal*	read ileo-cæcal
„ 138	„ 8	for *supposad*	read supposed
„ 141	„ 4	for *cushionery*	read cushion-like
„ 141	„ 27	for *parenchema*	read parenchyma
„ 141	„ 20	for *see*	read seen

At page 142	line 24	for *produced*	read caused
„ 142	„ 24	for *leasion*	read lesion
„ 141	„ 26	for *a cysted*	read an encysted
„ 144	„ 9	for *abraided*	read abraded
„ 148	„ 19	for *messenteric*	read mesenteric
„ 149	„ 11	for *abraided*	read abraded
„ 149	„ 17	for *was*	read were
„ 149	„ 18	for *its*	read their
„ 158	„ 20	for *cartilagenous*	read cartilaginous
„ 158	„ 32	for *Cruveilheir*	read Cruveilhier
„ 165	„ 11 and 21	for *parenchema*	read parenchyma
„ 173	„ 19	for *fissprous*	read fissiparous
„ 174	„ 8 and 19	for *Perkingay*	read Purkinje
„ 175	„ 2	for *chicken ovo*	read chick in ovo
„ 177	„ last	for *spurious*	read spurius
„ 184	„ 14	for *ossa ischium*	read ossa ischii
„ 139	„ 22	for *t us*	read thus